Quality Assurance Project

Egypt Country Report

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List of Acronyms

AED	Academy for Educational Development
CRHP	Cost Recovery for Health Project
ESQua	Egypt Society for Quality Assurance
GYN	Gynecology
IC	Infection Control
IPC	Interpersonal Communication
ISQua	International Society for Quality Assurance
MIS	Management Information System
MOH	Ministry of Health
OBS	Obstetrics
OR	Operating Room
PIT	Process Improvement Team
QA	Quality Assurance
QAC	Quality Assurance Committee
QAP	Quality Assurance Project
QAP/Egypt	Quality Assurance Project in Egypt
USAID	United States Agency for International Development

Executive Summary

The office of the Quality Assurance Project in Egypt (QAP/Egypt) was opened in July 1993, in collaboration with the Cost Recovery in Health Project (CRHP) and the Egyptian Ministry of Health. It was staffed by the QAP/E Resident Advisor and the Quality Assurance Coordinator. The original scope of work for the project was to improve quality of patient care through the institutionalization of a quality assurance program in CRHP pilot hospitals. Work began at the May 15 Hospital, a 174 bed, Ministry of Health acute care and outpatient facility in May 15 City, Cairo Governorate. The institutionalization of the quality assurance program, as measured by indicators developed at the start of the project to measure project impact, was achieved. Work accomplished during the project included the implementation of an infrastructure to support quality assurance at the hospital, development of standards and procedures for priority areas by staff, establishment of case management review conferences, and a quality improvement and problem solving process.

When planned renovations of the May 15 Hospital caused the QAP/Egypt interventions to be temporarily reduced in scope, QAP staff turned their efforts to the national level, working for the establishment of the Egyptian Quality Assurance Society (ESQua) in July 1995 and presentation of the First National Conference on Quality in Health Care in September 1995. It was thought that these efforts would accelerate the process of quality improvement in all MOH facilities and was consistent with Outcome 2 of Component One of the CRHP, to expand cost recovery to most MOH hospitals.

This report provides information on the status of quality assurance at the May 15 Hospital at the project start, the priority areas identified for development, and improvements and results achieved as a result of project interventions.

The Quality Assurance Project/Egypt closed in November, 1995. Quality assurance work in progress at the end of the project is being integrated into the Cost Recovery in Health Project.

Egypt Country Report

This document is the final report of the activities, and their results, undertaken by the Quality Assurance Project[1] in collaboration with the Cost Recovery in Health Project[2] and the Egyptian Ministry of Health from July 1993 through October 1995.

I. Project Overview

In early 1993 a proposal was submitted by the Quality Assurance Project (QAP) to USAID/Egypt to collaborate in quality assurance activities with the Cost Recovery in Health Project, under Component One of that project. The objective of Component One of the Cost Recovery in Health Project (CRHP) is to assist selected Ministry of Health (MOH) public hospitals and clinics to become fee-for-service facilities. Under CHRP, five pilot MOH facilities have embarked on decentralizing and improving facility management, upgrading facilities and equipment, and improving efficiency and quality of services. The stated objectives of the QAP proposal were:

1. To develop a feasible and effective quality assurance program for the CRHP facilities in Egypt that will result in improved patient care, improved support services and improved efficiency.

2. To develop the capacity to plan and implement quality assurance programs in the CRHP directorate and in the CRHP facilities.

The proposal was accepted, and in July 1993 a QAP/Egypt office was opened. QAP staff in Cairo included a Resident Advisor assigned from the

[1] The Quality Assurance Project is sponsored by the United States Agency for International Development (USAID) under Cooperative Agreement number DPE-5992-A-00-0050-00.

[2] The Cost Recovery in Health Project is sponsored by the United States Agency for International Development (Project No. 263-0170.)

QAP/Bethesda office and a locally hired Quality Assurance Coordinator. QAP/Bethesda staff were assigned part time to provide technical and administrative support and included a Technical Advisor and a Program Assistant. The original QAP/Egypt project agreement called for a Resident Advisor in Cairo for the first 12 months of the project with the Egyptian Quality Assurance Coordinator staying in position for 24 months. After the first 9 months of project implementation, the scope of activities demonstrated a need to extend the presence of a Resident Advisor for a second year. The extension of the Resident Advisor was accomplished, as well as the addition of an administrative assistant for the Cairo QAP office.

The Scope of Work for the QAP/Egypt team was to improve quality of patient care through the institutionalization of a quality assurance program in CRHP pilot hospitals. Initially two of the CRHP pilot hospitals were selected by the CRHP Directorate for QAP quality assurance activities, the May 15 Hospital, in Cairo and the El Kantara Gharb Hospital in Ismailia. Quality assurance activities were begun immediately in May 15 Hospital. El Kantara Gharb was still under construction and not yet ready to provide services. Therefore, only minimal quality assurance interventions were undertaken in El Kantara Gharb. Approximately 15 months into the QAP/Egypt project, in November 1994, construction on scheduled renovations began at May 15 Hospital during which building structural damage was revealed in the inpatient building that demanded a much larger reconstruction effort than anticipated. Inpatient services were closed, and outpatient services were somewhat curtailed, although still provided under difficult conditions, as construction was also being done to the outpatient facility. El Kantara Gharb Hospital did not yet have a completed physical structure, there was not a full staff complement assigned to the hospital, and ther were no patients. In January 1995, in discussions with the CRHP and USAID/Egypt, it was decided that QAP/Egypt would focus its attention on instituting quality assurance at the CRHP Directorate and working on quality assurance activities with a national scope, while maintaining the status of projects underway at May 15 Hospital until the completion of renovations and the re-opening of May 15 Hospital. In October 1995, the activities of the QAP/Egypt project were integrated into the CRHP activities and QAP/Egypt essentially ended by November 30, 1995.

II. Quality Assurance Project Methodology

The ultimate goal of quality assurance is to improve the quality of patient care provided. An intermediate objective to reaching that goal is the institutionalization of a quality assurance program to assist in ensuring the quality of care provided. The quality assurance (QA) work undertaken in this project was based on the following model.

There are 3 components in a quality assurance program:

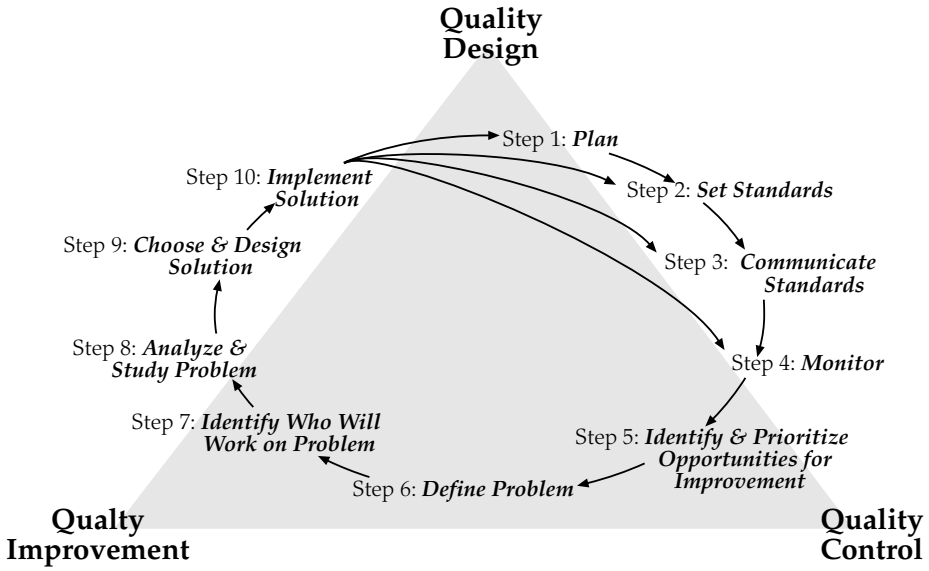
1. **Quality Design:** defining the quality assurance organizational infrastructure, standards of care and support services.
2. **Quality Control:** monitoring the levels of quality achieved by health services.
3. **Quality Improvement:** problem solving to improve identified areas in need of improvement or to prevent problems from occurring in patient care or support services.

The QAP developed a 10 step quality improvement cycle that comprises steps to be implemented in a quality assurance program (see Figure 1 on page 4). To achieve program implementation, there must be an organizational structure to support the quality assurance efforts and an environment that fosters creative problem solving by staff, to improve the quality of care.

Additionally, there are 4 underlying quality assurance principles which guide the implementation and function of a quality assurance program. The 4 principles are:

1. a focus on clients; meeting their needs and expectations.
2. a focus on health services as inter-acting and inter-dependent systems and processes.
3. a focus on data as a basis for decision making.
4. a focus on a team approach to quality improvement and problem solving.

Figure 1. Components of a Quality Assurance Program



The development and implementation process of a quality assurance program includes 4 phases:

1. creating an awareness of quality and a quality assurance program
2. building a capacity to conduct quality assurance program activities
3. implementation of a quality assurance program
4. achieving the results of the quality assurance efforts

This report describes the activities and the results of the activities of QAP/Egypt as it worked in collaboration with the CRHP, to meet its objective of implementing quality assurance in selected CRHP pilot hospitals. The report presents the project implementation indicators and the project status in achieving these indicators by the end of the project. The report also describes the process used in achieving the results, and in some cases, the difficulties encountered that resulted in not completing all planned activities. Lastly, the report provides information on QAP/Egypt participation in international conferences as well as national activities undertaken when the hospital based interventions were curtailed due to the renovations of the facilities.

III. Quality Assurance Activities and Results: May 15th Hospital

The May 15th Hospital is a 174 bed hospital (137 free beds and 37 pay beds) located in May 15 City in Cairo Governate. The population of the hospital catchment area is approximately 100,000. The hospital offers inpatient and outpatient services in general medicine and surgery, obstetrics and gynecology, orthopedics, ear, nose and throat, pediatrics and urology. In addition, the Outpatient Department provides dermatology, dentistry and emergency/casualty services. The hospital began offering services in January 1987. In 1992 the total hospital admissions numbered 3216, with 21,771 inpatient days and an average length of stay of 6.8 days. Bed occupancy rates have decreased from 47% in 1989 to 34% in 1992. Outpatient visits numbered 50,289 in 1992, down from 74,737 in 1989. Total staffing for the hospital numbers 278, of which 111 are physicians and 76 are nurses. The condition of the facility, although new, is poor, due to poor construction and lack of maintenance. Quality Assurance activities in the footnoted report were said to be "almost non-existent"[3]

III.A. Preparing for Project Implementation

An initial Quality Assurance Workshop was given for the CRHP Project Director, 7 members of his staff, and the Director of the May 15 Hospital, the May 15 Hospital Deputy Director, and 12 department heads and physicians in February 1993. The purpose of the workshop was to familiarize key decision makers in concepts of quality in the health care system, the relationship between cost and quality, the components of a quality assurance program, and how to build a quality assurance program.

Following the workshop, in March 1993, an assessment was conducted of the May 15 Hospital by the QAP Resident Advisor, the QAP Quality Assurance Coordinator, and a QAP consultant, together with selected May 15 Hospital staff. The objective of the assessment was to:

- learn about the quality of care and support services and,
- learn about the existing methods for assuring the quality of services within the hospital.

[3] Preliminary Business Plan for 15th of May Hospital, Cost Recovery for Health Project. February 1993.

Information was obtained on the presence of planning for quality services, written standards (clinical practice guidelines, policies and standard operating procedures), monitoring quality of care provided, systems for problem identification and improving quality of care, and in-service training for hospital staff.

The assessment team found they were unable to assess the quality of clinical care due to the lack of clinical standards and incomplete patient medical records. As noted earlier, a systematic method for ensuring the quality of patient care was lacking in most instances.

Immediately following the assessments, the results of the assessment were presented to the Hospital Director and 20 hospital department heads and resident physicians at a Planning Workshop. The workshop objectives were to:

- review basic quality assurance concepts and principles
- present the findings of the assessment
- review the hospital vision
- develop a change in strategy to implement a quality assurance program in the May 15 Hospital.

During the workshop the participants reviewed, revised, and reached consensus on a future vision and mission for their hospital. Participants then identified four goals needed to accomplish their vision. Objectives and strategies for each goal were delineated. The goals are:

1. to create an awareness of quality assurance and a quality assurance program in hospital staff;
2. to build an infrastructure to support quality assurance that will have a Quality Assurance Committee and Quality Improvement Teams to work to improve quality;
3. to train the Quality Assurance Committee and Quality Improvement Team members in quality assurance knowledge and skills; and
4. to assist the Quality Assurance Committee, Quality Improvement Teams and hospital staff in implementing quality of care interventions and monitoring achievements of both clinical care and support services.

Based on the goals of the May 15 Hospital quality assurance program and the QAP/Egypt scope of work, indicators were developed to measure achievement of the QAP project in implementing quality assurance at the May 15 Hospital. The indicators and the results achieved at the end of the project can be seen in Figure 2.

Figure 2. QA Project Implementation Indicators and Results

Indicators	Results 10/95
1. Create awareness of QA among hospital staff ■ at least 10% of hospital staff will have participated in awareness training	**1. Create Awareness:** ■ 68% of hospital staff have participated in awareness training
2. Complete arabic translation of QA in Health Care in Developing Countries monograph and 4 additional manuals	**2. Arabic Translation:** ■ Achieved.
3. Build QA Infrastructure at May 15 Hospital: ■ Functioning QA Committee ■ Hospital QA Coordinator assigned ■ Meeting skills institutionalized	**3. Building QA Infrastructure:** ■ Achieved ■ Achieved ■ Achieved
4. Build QA Skills of Hospital Staff: QA Committee (QAC) and Process Improvement Teams (PIT) will have: ■ awareness of QA ■ completed QA skills course ■ participated in one process improvement team cycle ■ facilitated one Process Improvement Team (PIT) ■ participated in QA training	**4. QA Skills:** ■ Achieved ■ Achieved ■ Achieved ■ Achieved ■ Achieved
5. Improve Patient Care: ■ set clinical practice guidelines for high volume, high risk, problem prone diagnoses ■ communicate guidelines ■ identify indicators to monitor clinical care ■ set monitoring system for clinical care ■ follow-up on monitoring findings	**5. Improve Patient Care:** ■ Achieved in Obs/Gyn, Pediatrics. Others in progress. ■ Achieved for Obs/Gyn, Pediatrics ■ Achieved for Obs/Gyn, Pediatrics ■ Case Management review instituted in Obs/Gyn, Pediatrics. Computerized Health Information System/Quality Information System in progress. ■ Follow-up: in progress
6. Operating Room Improvements: ■ infection control program ■ ensure availability of supplies ■ aseptic environment	**6. Operating Room:** ■ In progress ■ Achieved ■ Achieved with continuous monitoring
7. Complete and Document at least 3 Process Improvement Activities: ■ form Process Improvement Team recommendations, introducing change	**7. Process Improvement Activities:** ■ Achieved: information and reception area, interpersonal communications patient/provider, O.R. supplies; Laboratory and E.R. studies in progress

The following pages describe the work at May 15 Hospital and briefly, El Kantara Gharb Hospital. The format for presenting the information is a table describing the identified problem and the results of interventions to resolve the problem, followed by a narrative description of the process that brought about the results. The report also presents results of work undertaken after a change of project focus to a national scope after month 15 of the project.

III.B. Creating Awareness

Awareness Status 7/93	Results
Hospital Assessment revealed: A lack of knowledge among hospital staff of: ■ the role of QA program in health services ■ components of a QA program ■ role of clients in quality assurance	**Awareness seminars given:** 3/93 Key Decision Makers, CRHP, May 15 Hospital 7/93 QA Committee, May 15 Hospital 8/93 Key Decision Makers, EKG Hospital 9/93 Operating Room Nursing Staff, May 15 Hospital 1/94 May 15 Hospital Staff, series of awareness seminars 11/94 New QA Committee members, May 15 Hospital 1/95 QA Committee, EKG Hospital QA Participant Awareness Training (4 weeks): 5/93 QAP Quality Assurance Coordinator in USA 11/94 CRHP QA coordinator in USA 7/95 May 15 QA Committee in Lebanon
A lack of QA resource literature in arabic.	During QAP/Egypt, 2 QA Monographs and 3 QA course manuals were produced in arabic. An additional 4 QA course manuals in arabic were made available from QAP/Jordan. (A list of QA materials translated into arabic can be seen in Appendix I)

The Process:

Creating an awareness of the role of quality assurance in improving and ensuring the quality of patient care is the first step in establishing a QA program. The purpose of a Quality Awareness Seminar is to 1) familiarize staff with the role of quality assurance in health services and 2) through this

introduction, begin to create a culture for quality in the organization. The Objectives of a Quality Assurance awareness seminar are:

- Participants are able to discuss state-of-the-art principles and methods of quality assurance;
- Participants are able to state how these principles and methods can be applied to the MOH hospital system (May 15 and El Kantara Gharb Hospitals in particular).

The awareness seminars are given when the QA program is being introduced but also repeated as needed with new staff or when new teams are formed or new members join an already formed team.

The quality assurance seminar content varies depending upon the participants. In QAP/Egypt quality assurance awareness seminars have been provided at three levels:

1. One day orientation to QA concepts and programs, individual responsibility in the program: offered to general staff without specific quality assurance program responsibilities;
2. Three day seminar introducing QA concepts and methods: offered to staff serving on QA Committee and Process Improvement Teams; and
3. Three to four week participant training at QA courses and observation of recognized QA programs at health facilities: provided to staff with leadership roles in the QA program.

III.C. Building Infrastructure to Support Quality Assurance Activities

QA Infrastructure Status 7/93	Results
Hospital assessment revealed:	
Organizational structure lacking to support QA activities.	8/93 Quality Assurance Committee (QAC) formed.
QA tasks not defined and included in job position descriptions	8/93 Job Description for May 15 Hospital QA Coordinator completed
No designated forum to bring problems in quality of care resolution.	8/93 QA Coordinator appointed
No systematic methods in place to ensure quality of care.	8/93 Duties, responsibilities, and ground rules of the QAC defined
	9/93 QA meetings instituted, held every 2 weeks
	10/93 QA priority areas selected. QA plans developed annually, reviewed semi-annually for progress thereafter.
	10/93 CRHP Task Force formed to coordinate QAP activities with CRHP
	Additional skill training for QAC:
	12/93 Coaching of PITs
	4/94 Training of trainers

The Process:

A new QA program needs a defined infrastructure to support its activities. An effective infrastructure must be compatible with the already existing organizational structure, either becoming a part of it or working closely in collaboration with it. The QA program is defined by a QA plan which states the scope of the QA activities, who will carry them out, and the time frame in which they will occur. Meeting agendas and content and QA activities are documented in writing. The development of QA skills in staff, a QA plan, and systems for developing standards and procedures, monitoring, and problem solving are the primary focus of the capacity building phase. Examples of the Operating Policy developed for the May 15 Hospital QA Committee and an example of a QA plan for a priority area, the Emergency Room at May 15 Hospital, can be seen in Appendix II.

III.D. Quality Improvement: Clinical Services

Priority clinical areas for quality assurance improvement activities were selected by the Quality Assurance Committee. The priority areas were obstetrics and gynecology, pediatrics, orthopedics, emergency services, and surgery (with emphasis on operating rooms).

Quality Improvements Status: Clincial Care 7/93	Results
The hospital assessment and staff interviews following the assessment revealed the lack of: ■ written standards of care ■ provider supervision ■ case management review ■ in-service education system for physicians and nurses ■ a universal medical record system throughout the hospital document patient care	Medical Advisory Task Force formed *Obstetrics and Gynecology:* ■ clinical practice guidelines developed and instituted ■ indicators selected to monitor care ■ weekly case management conferences instituted with Ob/Gyn staff and consultant specialists ■ medical record developed, pilot tested, to implemented, for obstetrical, labor and delivery, post-partum care *Pediatrics:* ■ clinical practice guidelines developed and instituted ■ instrument developed to measure quality of care using guidelines as standard ■ Pediatric medical record developed, pilot tested ■ case management review, weekly, instituted with pediatric staff and consultant specialists ■ 3 week on-site training at Cairo University for staff pediatricians ■ May 15 Hospital pediatricians attend weekly grand rounds at Cairo University ■ Patient referral system set-up for patients requiring more specialized care between May 15 Hospital and Cairo University. Plans to improve quality of care in the Emergency Room and Out Patient Department were temporarily discontinued due to hospital construction.

The Process:

A primary strategy in improving clinical care is the involvement and the consensus of the staff physicians in the improvement process. A Medical Advisory Task Force, comprised of recognized clinical specialists in the Cairo medical community, was formed to guide the QAC in its clinical practice improvements. Internally, the May 15 Hospital QAC requested medical and nursing staff working in each priority area clinical area to improve problem areas identified by the QAC.

The development of clinical standards in the form of clinical practice guidelines for staff physicians was a priority activity. In the development of the guidelines the underlying principles were that the guidelines must be based on acceptable medical practice, be realistic for practice at May 15 Hospital, and have the consensus of the staff physicians. Because physician consensus is critical in the use of practice guidelines and this was the staff's first exposure to guideline development, the QAC asked all the physician staff of each department to be involved in the guideline development rather than appointing a Process Improvement Team to work on the guidelines. Local consultant specialists were identified and asked to work with the medical staff.

A 4-phase process was introduced for the development of guidelines. In the first phase, the existing structures available for care were assessed: physical set-up, resources available, (supplies, equipment, and personnel knowledge and skills) and policies and procedures. Next, an assessment was made of clinical practices and areas identified for improvement. Following the assessment of clinical practices, new clinical practice guidelines were developed. In the final phase of the process, resources needed to implement the new guidelines were identified.

During the guideline development phase, the consultants met with the physician staff on a weekly basis. First the staff discussed clinical treatment problem areas and based on their discussions, selected clinical conditions to be included in the clinical practice guidelines. The criteria used for selection were conditions determined to be high volume, high risk or problem prone. Nine obstetrical conditions and 14 pediatric conditions were chosen by the two departments respectively. Next, at the weekly meetings, a staff physician took

responsibility for leading the discussion on the case management for each diagnosis selected. With the consultants in attendance, problem areas in case management were identified and discussed. Following the meeting and based on the discussion, a draft guideline was prepared by the physicians, with assistance from the local consultants and QAP staff.

Following completion of the draft guidelines, a workshop was held. In addition to the staff physicians and the consultants, participants included the Hospital Director, the CRHP training consultant, the engineer and management staff. The purpose of the workshop was two-fold. First, to provide a final opportunity for all staff to review and agree on the clinical practice guidelines. Second, to translate the guidelines into the resources needed to carry out the guidelines. The purpose of including as workshop participants the individuals responsible for decisions about resource availability and equipment maintenance, was to ensure that the guidelines were realistic, i.e., that required equipment was in place or could be ordered, and that training in required skills would be provided.

Lastly, quality indicators were identified, i.e., indicators used to measure and monitor the quality of care provided. The indicators will be used in a computerized monitoring system which is currently being developed. The physicians asked to continue to meet on a weekly basis with the consultants for case management review for monitoring care provided and reducing variation in clinical practice. Examples of the clinical guidelines and the obstetrical records that were developed can be seen in Appendices III and IV respectively.

A result of the above approach to setting guidelines was the identification by the physicians of skills deficits and undesirable variations in clinical practice. These were addressed through their discussions with the consultants and through more structured physician training programs. Another result of the approach was the demonstration of the relationship between structural elements and clinical practice. It is hypothesized that this more comprehensive method of guideline development results in setting more realistic clinical guidelines and aides in ensuring their subsequent and continued implementation.

Quality Improvment Status: Clinical Care 7/93	Results
Interviews and observations with Operating Room (O.R.) Nursing staff demonstrated a lack of: ■ permanently assigned nursing staff to the O.R. area ■ correct performance of basic O.R. nursing skills ■ job descriptions defining responsibility and tasks for scrub, circulating, and recovery room nurses ■ procedure manual for aseptic techniques and preparation and handling of sterile "packs" ■ procedures for housekeeping staff for O.R. special procedures ■ lack of O.R. gowns, suits, gloves, causing staff to perform surgeries in street clothing.	■ Cadre of nurses permanently assigned to the O.R. and Recovery Room ■ 4 week on-the-job training in basic skills for 9 O.R. nurses, 2 O.R. supervisors, 2 Recovery Room Nurses, 1 Central Supply Supervisor Post-training skills assessments show an increased compliance with nursing procedures. Improvement in the use of appropriate instruments for surgical procedures documented by Central Supply. ■ O.R. nursing policy and procedure manuals written ■ Job descriptions written for O.R. nursing and housekeeping positions ■ OR consultant employed to re-enforce training of O.R. supervisors, staff nurses. ■ O.R. gowns, scrub suits, and gloves acquired and worn during surgical procedures and in the O.R. areas.

The Process:

The Operating Room (O.R.) was selected by the QAC as one of the hospital priority areas for improvements. The nursing staff worked with the QAP/ Egypt staff to gather data and identify problems in the O.R. area; the identified problems are listed above. The first step in making improvements was accomplished when the Hospital Director agreed to assign a permanent nursing staff to the O.R. With the stabilization of nursing staff, training to up-grade clinical nursing skills could begin. A contract to provide on-the-job training to the May 15 O.R. nursing staff was agreed to between the May 15 Hospital and a private Cairo hospital recognized for quality. A 4 week training was provided, 1 week of theory and 3 weeks of practice. Following the training, a QAP O.R. nursing consultant was employed to work with the nurses on a day-to-day basis at the May 15 Hospital to re-enforce the use of the skills learned in the training.

The QAP nursing consultant worked with the supervisors to develop a skills check list for monitoring nursing performance in the operating room. The checklist is used to assess an individual nurse's strengths and weaknesses in O.R. skills. When the individual nurse's assessment is aggregated with those of the others, specific operating room techniques and other areas needing improvement for all the nurses can be identified. These assessments are used to upgrade nursing skills on an individual basis and form a basis for the

development of in-service training for all staff. This checklist is used to monitor immediate post-training performance and on-going nursing performance for continuous improvement of skills. The QAP nursing consultant also worked closely with the O.R. supervisors and staff to assist in communicating and implementing the O.R. policy and procedures manual. Finally, a solution was found for providing O.R. scrub suits and gowns. Material was purchased and the hospital sewing room produced the O.R. scrub suits and dresses at a cost within the limited amount of funds available for the project.

III.E. Quality Improvement: Support Services

Quality Improvement Status: Support Services	Results
1. Through patient complaints and discussions with staff, the following problems were identified: ■ Patients and visitors have no place to go to get information or seek help. ■ Long waiting lines of patients and visitors at the window at the outside gate wanting to enter the hospital. This causes dissatisfaction to patients and visitors. Window at outside gate serves as cashier for outpatient and provides visitor cards for entry to the hospital.	■ Two staff nurses trained in customer quality service and provided with uniforms to serve as receptionists at information desk. ■ Information desk established at hospital. ■ An information data base was created and regularly updated to respond to visitors questions. ■ Tighter controls established over visitor fees, resulting in 50% greater revenue. ■ No more waiting lines outside the hospital. ■ Directional signs mounted throughout the hospital to aid patients and visitors.
2. Hospital administration and staff have been receiving complaints from patients and visitors about poor communication with and lack of information from doctors and nurses.	■ 49 physicians and 30 nurses trained in a series of interpersonal communication workshops. ■ Post-training evaluations showed physicians found the training helpful, all but 1 uses the communication job-aid used in the training, all thought all hospital physicians would benefit from the course. ■ Post training evaluations included 162 exit interviews conducted with patients following consultations to obtain their satisfaction with physician interpersonal communication. 99% of patients expressed high satisfaction with the physician's interaction with them.
3. Frequent inventory stock-outs have required patients to purchase supplies needed for surgery and caused delay and last minute cancellation of surgical procedures.	■ PIT formed. ■ New inventory ordering and stock monitoring procedures pre-tested, resulting in no inventory stock-outs during a 3 month trial period and in follow-up evaluations.
4. To improve quality and decrease waste, the QAC launched a study to determine appropriateness of physicians use of laboratory tests.	■ PIT formed to conduct study. ■ Results showed 52% of tests ordered were either inappropriate or not used in treatment decisions. The cost of these tests amounted to 23% of laboratory annual deficit. ■ PITs formed to find solutions to inappropriate use of laboratory tests. Work in progress.

The method used for problem solving is based on the previously mentioned 4 QA principles, 1) client oriented, 2) looking at the hospital as a system, 3) decisions based on data, and 4) a team approach to problem solving. The decision to use the team approach has 2 aspects. One is the fundamental belief that the individuals most closely involved in a system have the best knowledge of the system, of how the system works, and are the most appropriate individuals to diagnose a system problem and suggest an effective solution. The second aspect is related to viewing the hospital as a system. Problems in a system or process are rarely isolated in one department or functional area of the hospital. A change in one process will affect a change in another part of the system. For this reason, Process Improvement Teams are frequently formed with inter-disciplinary and inter-departmental membership. Examples of the process used in the above quality improvement activities follow.

First a problem is brought to the attention of the QAC. If the problem is thought to warrant study, the QAC will appoint a PIT to study the problem and suggest solutions. The PIT membership is made up of staff with the most knowledge of the problem area. The size of a PIT may vary from 2 to 12 members. At May 15 Hospital, the PITs usually ranged in size from 3 - 6 members. In addition to appointing the PIT, the QAC also appoints a QAC member to act as coach and facilitator to the team. The coach's role is two-fold. One responsibility is to assist the team members in using QA techniques, as appropriate, for problem solving. The other is to ensure that team activities are coordinated with other QAC quality improvement activities. It also provides the QAC members with the opportunity to practice coaching and facilitation skills.

Using QA techniques, PIT members study the problem, develop a problem statement, gather information to determine the "root" cause of the problem, and identify solutions to the problem. An important part of the process is the documentation of the quality improvement process on a "story board". A story board is a written record of the problem statement, QA tools used, data collection forms, data collected and analyzed, and recommended solution(s). (Selected story boards for the above process improvements can be found in AppendixV).

The proposed solution, with documentation, is then brought back to the QAC for review. The QAC members usually hold responsibility and authority for hospital operations in their respective departments. The QAC studies the recommended solution for feasibility (cost and ease of implementation) as well as its potential to effectively resolve the problem. With a positive review, the QAC sends a memorandum to the Hospital Director (who in this case, is also a member of the QAC) authorizing implementation.

PIT members or other appointed staff develop an implementation plan, implement the solutions, and, most importantly, collect data post-implementation to determine if the solution is resulting in the expected improvements. In the above improvement examples, post-implementation evaluation took place in the Inter-personal communications (IPC) intervention at 6 months post intervention to determine if changes were still in effect. The O.R. nurses were monitored continuously over the 6 months period post-training. The O.R. study resulted in institution of a procedure which continuously monitors stock levels, thereby avoiding unexpected stock outages. The Ob/Gyn and pediatric staff are self-monitoring on a weekly basis through their case management review meetings. Results of all these changes are monitored by either the QAC or appropriate hospital supervisors. A decrease in pre-determined acceptable levels of quality results in a review of the situation.

Indirect results from the above interventions also occurred. In the development of the clinical practice guidelines, consultant specialists were selected to work with the staff physicians. The consultant specialists were faculty at prestigious Medical Faculties in Egypt, the Ain Shams and Cairo University Faculties of Medicine and are well respected for their clinical expertise. However, none of the specialists had been exposed to quality assurance concepts. The role of QAP staff was to work with the consultants, as they in turn worked with the May 15 Hospital staff, to provide them with QA concepts and skills. The result of this exposure has been the introduction of QA concepts and practices into the consultants' teaching at their respective universities. A second example comes from the reception desk activity. An objective of the CRHP is to increase utilization of the hospital facilities by the public, thereby increasing facility revenues; the CRHP has a marketing program to assist in this objective. Following the installation of the reception desk, a visitor came to May 15 Hospital to visit a friend admitted for an illness. That friend was the

editor of one of the most widely read magazines published in Cairo. The following was published in the magazine. "For the first time in a public hospital you are greeted at the door by a smiling young woman in uniform who directs visitors and patients to the place they are looking for and to the appropriate department according to their need!!!! This is not a dream but a reality..." Response and praise came from many directions in Cairo to the hospital. This unsolicited article no doubt contributes to encouraging prospective clients to use May 15 Hospital facilities.

The status of quality improvement projects in progress is outlined in the table below.

Quality Improvement Projects	Status 10/95	
1. Infection Control (IC). *Observations indicated:* ■ lack of hospital IC program ■ need to upgrade nursing staff skills in IC techniques.	10/93 10/93	QAC selects IC as a priority area IC PIT formed ■ OR nurse assigned to work on Hospital IC ■ QAP collaborating with CRHP Infection Control consultant to develop QA Infection Control improvement plan. ■ One month study to document Hospital infection rate planned. Not completed.
	4/94	2 day workshop in IC techniques for nursing staff. Trainer: CRHP IC consultant. Total hospital nursing staff participated (80 nurses).
	7/94	Hospital construction results in discontinuation of IC quality improvement activities.
2. Emergency Room. Chosen as a priority area for up-grading.		A PIT was formed to identify areas for improvement
	9/94	Studies completed on: ■ availability of physicians on 24 hour basis in E.R. ■ frequency of presenting diagnosis for purposes of developing clinical practice guidelines. Work temporarily discontinued due to construction
3. Information Systems A need was identified to implement an information system to support health care quality management	5/95	International consultant met with with QAP, CRHP/MIS and Systems Departments, QAP/Obs and Pediatrics consultants. A quality management information plan was developed. Work on the development of a quality management information system has been integrated into the CRHP and is in progress.

The need to implement an information system for monitoring the quality of care was a primary concern of QAP from the outset of the project. However, the project's initial assessment of May 15 Hospital demonstrated that fundamental elements necessary for implementing a monitoring system were not in place. Over the life of the project much of the work undertaken was focused on establishing a MIS system capable of collecting and monitoring data for purposes of evaluating quality of care. Major achievements in this regard are:

- development and implementation of patient medical records, data to be entered into a data base and monitored.
- identification of indicators for measuring the quality of care and health outcomes.
- development of clinical practice guidelines that enable practitioners to evaluate the quality of care provided.

Only when these fundamental elements were in place, could work begin on the implementation of a system-wide information system. As discussed above, in May 1995, a plan for a system wide automated information was developed and is currently being implemented through the CRHP project.

IV. Activities at the National Level

Three QAP activities were of a national scope. A national workshop on quality assurance was held in April of 1994. After the primary focus of QAP was redirected, due to May 15 Hospital renovations, activities included the development of the Egyptian Society For Quality Assurance and the organization of the First National Conference on Quality in Health Care in September 1995.

IV.A. Workshop on Quality Assurance by Monitoring Clinical Performance

A 3-day workshop was conducted by Dr. Avedis Donabedian, a professor at the University of Michigan and one of the world's leading experts in quality assurance, for 29 participants representing the CRHP Directorate, the 5 CRHP pilot facilities and the MOH. The content of the workshop was planned to provide decision makers and key staff with the concepts underlying quality assurance in health care organizations. The number of participants was limited to no more than 30 to provide attendees with the opportunity to question and discuss the workshop content and to begin to plan how they might integrate the concepts of quality assurance into the cost recovery strategies in their institutions.

IV.B. The Egyptian Society for Quality Assurance (ESQua)

QAP/Egypt staff were instrumental in doing the preparatory work for the development and ultimate registration of the Egyptian Society for Quality Assurance (ESQua). A meeting held on June, 1995, was led by His Excellency, the Minister of Health, with the 50 founding members of the society in attendance. The purpose of the meeting was to initiate the society and to finalize all legal requirements prior to submitting for registration of the society under the Ministry of Social Affairs. The vision, mission, goals, and objectives of the society were discussed. Governing board members were nominated and approved by the members. Five committees were formed and each member selected a committee on which to participate. The standing committees are: 1) accreditation, 2) consumer awareness, 3) standards 4) human resource development and 5) research.

The mission of ESQua is"to introduce the concept of quality assurance and continuous quality improvement to all sectors of health care services in Egypt". The goals of the Society are:

1. Create awareness among health care providers in the community about the concept of quality assurance in health care;
2. Emphasize the concept that the client who is the health care beneficiary is the cornerstone for all health care plans. All efforts should be made to meet his needs and expectations;
3. Provide continuous quality improvement for health care in Egypt; and
4. Coordinate with relevant organizations to develop, improve and mobilize human resources in the field of health care to enable them to provide high quality services.

The application for registration was approved by the Ministry of Social Affairs and ESQua became a legal registered non-profit society in Egypt on July 2, 1995.

IV.C. The First National Conference on Quality in Health Care

The First National Conference on Quality in Health Care was held in Cairo, Egypt, September 26-28, 1995. QAP/Egypt staff had primary responsibility for organizing and presenting the conference in collaboration with CRHP and ESQua. The conference objectives were:

1. To explain concepts of Quality Management in health care and how to build institutions based on these concepts;
2. To exchange experience and knowledge with other countries that apply Quality Management in health care;
3. To review the methodology of implementing Quality Management in hospitals and other health care institutions;
4. To disseminate information and experience produced by Cost Recovery for Health Project and Quality Assurance Project; and

5. To encourage Egyptian researchers to introduce their papers and share their experience in the field of Quality Management in health care.

Fifty abstracts were received from the call for abstracts; sixteen of the 50 were selected for presentation at the conference. Three hundred fifty participants were expected at the conference. Seven hundred and sixty-two participants attended the sessions due to the great interest in quality assurance. Participants came from the MOH, other Egyptian Ministries and Institutions including Faculties of Medicine, Armed Forces, teaching institutions, professional syndicates, the private sector, and the community. Regional participants came from Jordan, Lebanon, and Bahrain. Other international participants were from the United States, Canada, Finland
and Germany.

National and international speakers spoke at plenary sessions and at concurrent work group sessions. The proceedings of the conference have been published and can be obtained from the CRHP.

V. International Activities

QAP/Egypt staff and May 15 Hospital staff participated in the annual meetings of the International Society for Quality Assurance (ISQua) in 1994, in Venice, Italy, and in 1995 at St. John, New Foundland, Canada. QAP and May 15 hospital staff presented the following papers:

1994:

- Clinical Practice and the Use of Laboratory Tests at "May 15 Public Hospital" in Egypt
- Methodology for Developing Clinical Guidelines in a Public Hospital in Egypt.

1995:

- A Strategy to Improve Patient Satisfaction in a Public Hospital in Egypt[4]

QAP presenters won the ISQua conference prize for the "Best Paper from Africa and the Middle East" in 1994 and 1995. The winning paper in 1994 was the study on laboratory practices.

VI. Summary Discussion

Implementing a quality assurance program in a hospital requires changes in the hospital organizational structure, in behavior and often attitudes of staff, financial resources, and knowledge and skills in staff, of both a clinical nature and of quality assurance. For hospital staff who have never been exposed to a quality assurance program, it is difficult to visualize what can be changed through their efforts and the use of quality assurance methodology. Obviously, some quality improvements can be achieved relatively quickly, such as the operating room supplies and the reception/information desk improvements. These achievements can act as a catalyst for more profound, subsequent changes in organizational structure and attitudes and behaviors.

Some constraints to the implementation of this project, which were not under the control of the QAP/Egypt Project, were the staff assignments

[4] This study and training were conducted in a collaboration of QAP/Bethesda and QAP subcontractor, The Academy for Educational Development (AED).

to and from the May 15 Hospital by the MOH, the lack of completion of construction at El Kantara Gharb Hospital, and the renovations of the physical structure at the May 15 Hospital.

Staff transfers from the May 15 Hospital increased the difficulty of project implementation, when key staff who had received considerable training in quality assurance and technical assistance were transferred. Staff filling the vacated positions had to be trained and "brought up to speed" which slowed the work process and required additional resources.

El Kantara Gharb Hospital, selected to be one of the pilot hospitals for quality assurance, had not completed construction nor instituted a complete staff and received patients up to January 1995, eighteen months into the project.

The renovations at May 15 Hospital came at a particularly vulnerable time in the project implementation process, approximately 1 year into the project. The May 15 Hospital staff were at the point of beginning to integrate learning and practice and institutionalize quality assurance systems into their work. Staff struggling to maintain patient services under difficult working conditions could not continue with their quality improvements. Priority sites for quality improvement, such as the operating room, were closed and under renovation.

Given the changes in an institution that must take place to institutionalize a quality assurance program, this project has demonstrated the necessity of a resident advisor with a strong quality assurance knowledge base to lead the way and provide continuous re-enforcement. To ensure that quality assurance activities continue after the life of the project, host country staff need to be trained; the role of the QAP Quality Assurance Coordinator demonstrates one way this can be achieved.

In a relatively short period of time, approximately 15 months, a great deal was accomplished at the May 15 Hospital and, in the remaining months of the project, at the national level through the establishment of ESQua and the First National Conference on Quality in Health Care. The QAP/Egypt Project has laid the groundwork and taken the first steps in the institutionalization of quality assurance in MOH facilities in Egypt. The QAP/Egypt work in progress is being integrated into the Cost Recovery in Health Project where it will be expanded into the other cost recovery pilot facilities and into the Ministry of Health.

Appendix I: List of Quality Assurance Material Translated Into Arabic

Available Arabic Resources

1. QA Awareness Workshop (Egypt)*
2. Team Building Workshop (Jordan)
   - Team Building Exercises
   - Team Building Case Studies
3. Interpersonal Relations Workshop (Egypt)
4. Distinguished Service (Jordan)
5. QA Monograph (Egypt)
6. Problem Solving Monograph (Jordan)
7. Healthcare Quality Awareness Monograph (Jordan)
8. Quality Customer Service Workshop (Egypt)
9. Infection Control Principles, Nurse Workshop (Jordan)
10. First National Conference on Quality in Health Care Proceedings (Egypt)

* Designates QA Program responsible for the translation

Appendix II: Operating Policy of May 15 Hospital Quality Assurance Committee

Emergency Room: QA Improvement Plan

May 15 Hospital
October, 1994 - March, 1995

I. Objectives of the Emergency Room (E.R.)

A. To ensure that the ER system developed by the Cost Recovery for Health Project is being implemented.

B. To improve the quality of emergency care provided in the ER.

C. To improve the quality of interpersonal relationship between ER staff and patients and among ER staff.

II. Implementation Strategy

A. To ensure that the ER system developed by the Cost Recovery for Health Project is being implemented.

a. Disseminate policies and procedures among physicians:
   1. Distribute copies
   2. Conduct staff meetings to discuss

b. Distribute, discuss, and agree on job descriptions with staff.

c. Assign permanent ER staff. This included nurses, housekeeping, and reception staff.

d. Develop a list of ER supplies based on current utilization.

B. To improve the quality of emergency care provided in the ER.

a. Improve the Technical Skills of ER nurses
   - Develop training curriculum for E.R. nurses.
   - Implement training.

b. Develop Clinical Guidelines

- Determine most common and problem prone procedures. Previous utilization analysis has indicated that the most common cases seen in the ER are the following:
  - □ Colic (setting of CGs will be the responsibility of I.M. and Surgery)
  - □ Wounds (CGs responsibility of Surgery)
  - □ Labor (CGs has been developed by OB/GYN Department)
  - □ Asthma (responsibility for setting CGs is with Pediatrics Department and I.M.)
  - □ Vomiting/Diarrhea (setting CGs is responsibility of Pediatrics, I.M., and Surgery
  - □ Fractures (Orthopedics)
  - □ Requests for medico-legal reports.
- Plan and develop a time-schedule for setting C. G. s (assign team members and consultants, if needed)

c. Develop a monitoring system to assess ER performance.

i. **Select indicators for performance review.** Performance review will focus on the following aspects:
   - Administrative/behavioral (commitment to policies and procedures of O.R.)
   - Technical competence.

ii. **Develop a data collection strategy.**
   - develop the tools needed for assessment (checklists, ER forms, medical record)
   - Assign responsibilities for data collection.

iii. **Determine the organizational structure** that will ensure the implementation of the monitoring system:
   - Who has the authority to review performance.
   - Role of chief of medical staff/medical staff body in the assessment process.
   - determine the incentive system that will be used to encourage good performance

iv. **Case review**
   - this activity will be coordinated with various departments. Cases that require review will be forwarded to the relevant department to be reviewed under its case review program.

v. **Assess Patent Satisfaction**

- develop a patient satisfaction questionnaire.
- develop a system for data gathering and analysis.

C. To improve the quality of interpersonal relationship between OR staff and patients and among OR staff.

a. provide training to ER nurses in interpersonal communication.

b. continue training of ER physicians in interpersonal communication.

Emergency Room Improvement Plan Time-Schedule

October 1994 - March 1995

	OCT	NOV	DEC	JAN	FEB	MAR
1. Determine List of most common and problem prone cases						
2. Develop a time schedule for setting Clinical Guidelines						
3. Setting C.G.s						
4. Review Policies & Procedures						
5. Disseminate Policies & Procedures						
6. Develop Training Curriculum for Nurses						
7. Identify Training Sites						
8. Training of Nurses						
9. Interpersonal Communication Training						
10. List of Supplies						
11. Develop Monitoring System						

May 15 Hospital QA Committee Operating Policy

Meetings

- **Schedule.** The QA Committee should have regular meetings once every two weeks. The time of the meeting should be fixed and agreed upon by all members of the committee. Reminders for the meetings should be the responsibility of the QA Secretary. QA Coordinator should notify the secretary about any changes in the meeting schedule.

- **Agenda for the meeting.** The QA Coordinator shall prepare an agenda for each and every meeting. This agenda should be photocopied and distributed to all committee members at least 48 hours prior to the meeting. The distribution of the agenda shall be the responsibility of the secretary. A copy of a standard agenda form is attached.

- **Purposes of Meetings.** Meetings should take place to review the following:
  - ☐ status of QA activities.
  - ☐ discuss the results of studies or process improvement activity.
  - ☐ discuss major problems existing in the hospital and discuss ways for dealing with these problems.
  - ☐ assign responsibilities for each task.
  - ☐ make decisions regarding suggested solutions presented for implementation.
  - ☐ evaluate performance of the QA Committee and the performance of the process improvement teams.

- **Writing Minutes.** The secretary shall take the minutes during each meeting.

  The minutes should include the following:
  - ☐ purpose of the meeting.
  - ☐ names of participants and names of those who are absent.
  - ☐ time at which the meeting started and ended.
  - ☐ a brief description of major discussions made.

- □ a list of all decisions made.
- □ next meeting time.
- □ topics to be discussed in later meeting.

After the meeting, it is the responsibility of the QA Coordinator to review the minutes prepared by the secretary and make any changes before finalization. Each committee member (those present or absent should receive a copy of the minutes not later than 48 hours after the meeting. A copy of a standard minutes is attached.

Process Improvement Studies.

Prioritize Areas for Improvement. May 15 Hospital faces a number of problems and has a larger number of opportunities for improvement. However, with the limited resources, the QA Committee is unable to deal with a large number of these problems, therefore, the Committee should prioritize the areas in which they want to conduct either clinical studies or process improvement activities. NO QA COMMITTEE MEMBER shall initiate a study on his/her own without the knowledge and the approval of the QA Committee.

Assigning Responsibilities and Teams. Responsibilities should—be assigned for each study the committee decides to work on. In some cases, a team need to be formed to work on one problem. In this case, suggestions for the selection of team members should be discussed. The selection of team members should be based on the criteria discussed in the QA Awareness workshops. For each team, a coach or a facilitator should be assigned. It is preferable that the person in charge i.e.; coach or facilitator, is a QA member. This will allow the Committee to keep track of activities, avoid overlap between activities, and practice facilitation techniques.

Authorization for Action. Once a study or an improvement activity has been agreed upon by the QA Committee, a standard memo should be issued by the QA Coordinator and approved by the Hospital Director. This memo should be distributed to all departments or individuals in which team members might need to cooperate with the conduct the study. The memo should include the following information:

- ■ the name of the activity.
- ■ the purpose of the activity.
- ■ the problem that the team will be trying to understand and solve.

- what is expected out of the collaborating departments/individuals. This may include facilitation of data collection, review of records, interviews, ...etc. names of team members that will be working on the problem.
- the expected duration/visits needed to complete the activity.
- request to facilitate the work of the team.

A copy of a standard memo of "Authorization for Action" is attached.

Team Plan. Once an activity is identified for improvement and the team selected, it is the responsibility of the facilitator to call the participants for a meeting and set the design, and the agenda for the activity. Once this is decided, the facilitator shall inform the QA Coordinator about the plan of the team. This plan should include:

- names of participants.
- design of the study or ways in which they intend to analyze the problem.
- time frame for the whole process; how long they expect the data collection time to take, developing solutions and coming up with solutions.

This plan will assist the QA Coordinator follow up on the progress of the activities of each team. A copy of a standard "Team Plan" is attached.

Follow-up on QA Activities. It is the responsibility of the QA Coordinator to follow up on each activity taking place under the QA unit. He will make sure that the plan is followed, that responsibilities are assigned, and that the time schedule is respected. Any unexplained delays in the work of a team shall be discussed with the facilitator. If the team proves to be ineffective, the QA Coordinator shall discuss the situation with the Hospital Director to take further action.

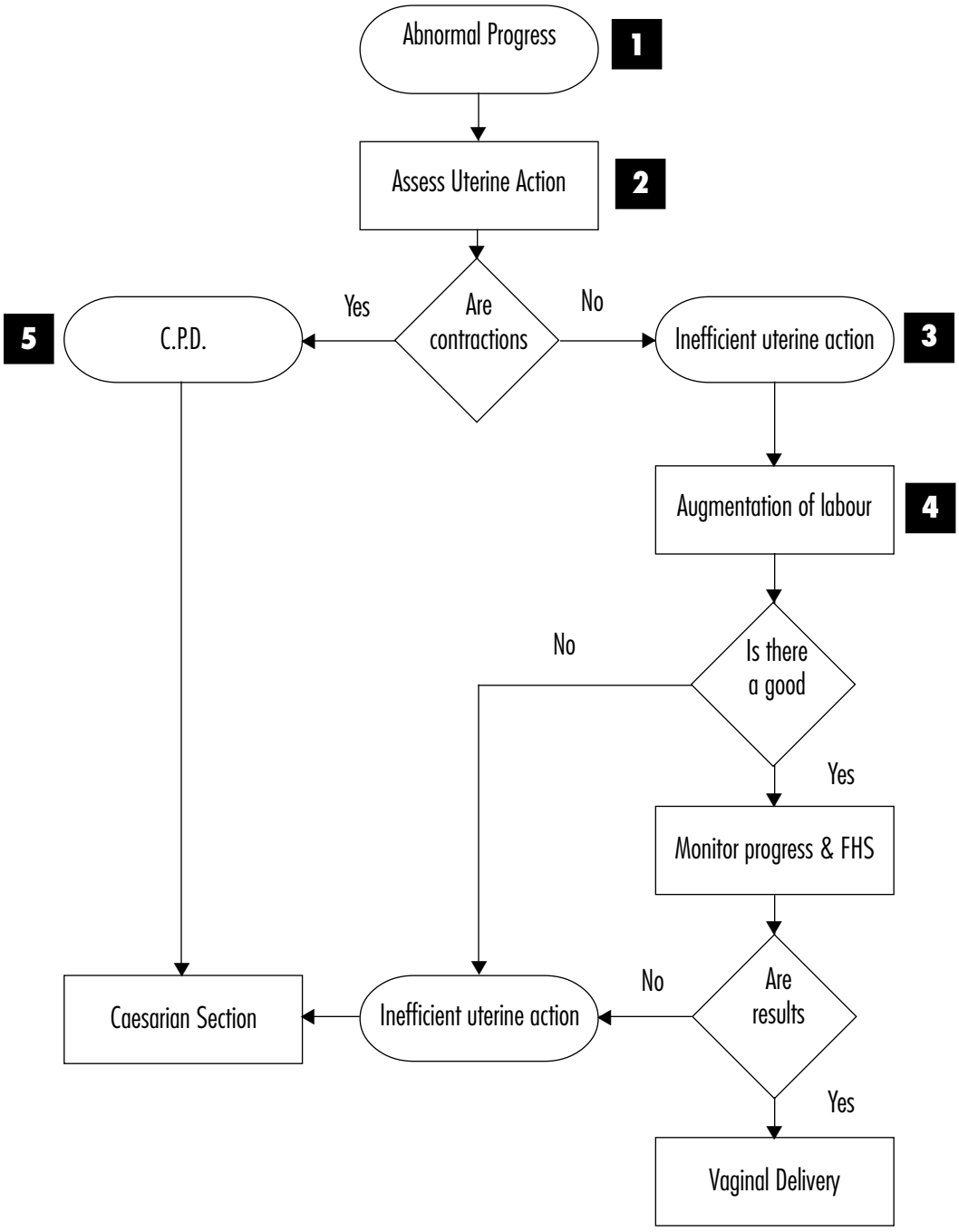
Authorization for Improvement Implementation. Once the QA Committee, based on the results submitted by the process improvement teams, agree on solutions for the studied problem, this suggestion should be raised to the Hospital Director. A standard memo should state the following:

- the title of the study.
- the problem that was analyzed.
- results or major findings.
- suggested solutions.

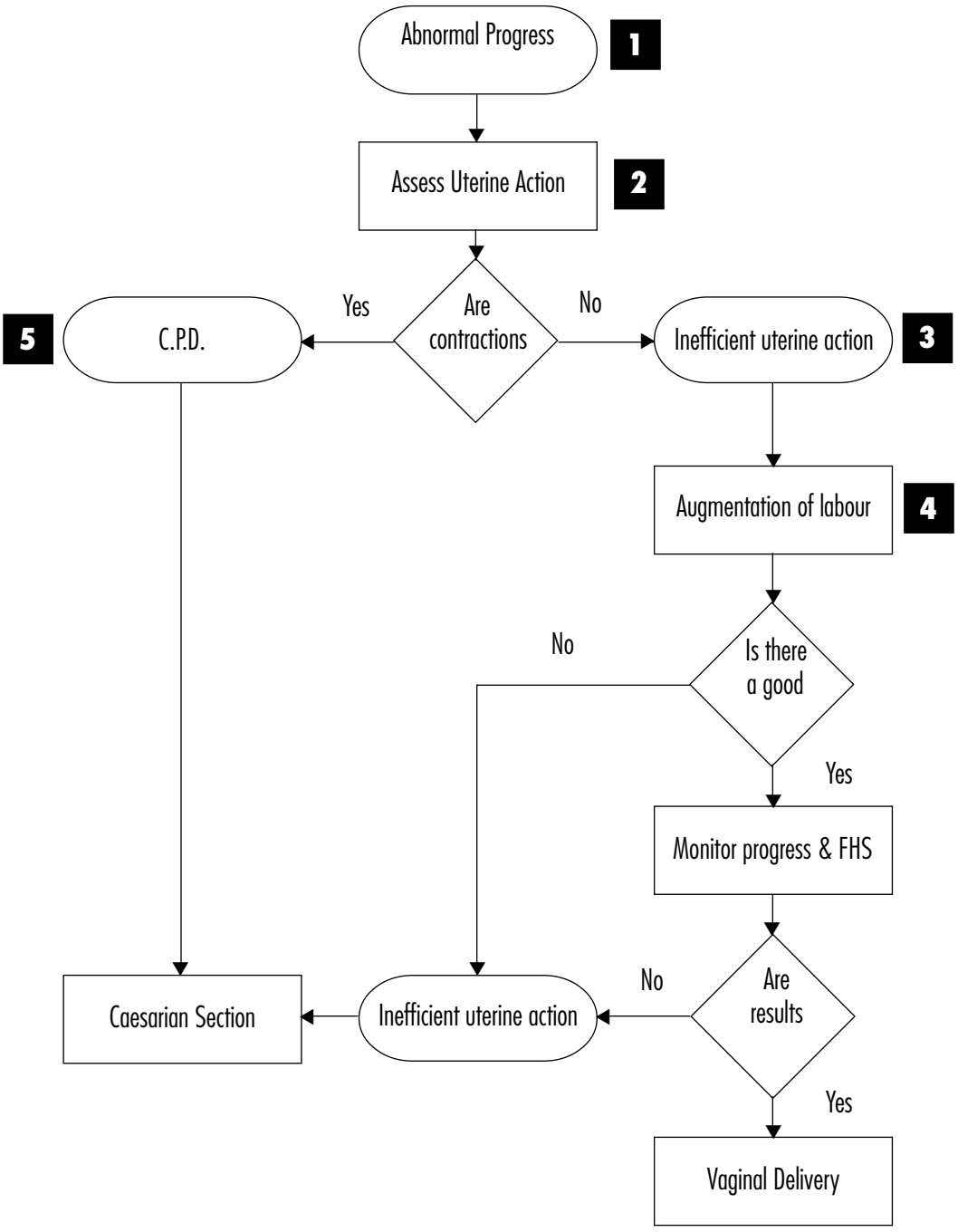
A copy of a standard memo of 'Authorization for Implementation" is attached. This memo should be submitted for the Hospital Director. It is the responsibility of the QA Coordinator to follow-up and ensure the implementation of the solutions.

Appendix III- Examples of Clinical Practice Guidelines

V. Failure to Progress in Labour



V. Failure to Progress in Labour



1 Abnormal Progress:

Signs:

Dilatation of the Cervix:

The cervix fails to dilate by the rate of 1 cm/hour for 2 hours (Protracted Dilatation) or stops to dilate after normal progress (Secondary Arrest of Dilatation).

Descent of Presenting Part:

The head fails to descend by the rate of 1 cm/hour for 2 hours (Protracted Descent) or stops to descend after normal progress, i.e., in the 2nd stage (Arrest of Descent).

Protraction disorders are associated with cephalopelvic disproportion (CPD) in 28% of cases, while arrest disorders are associated with CPD in 52% of cases. Inefficient uterine contraction due to various causes is responsible for the rest of the cases.

2 Assessment of Uterine Action:

Uterine contractions are monitored by tocogram or even manually.

3 Inefficient Uterine Action:

The case may be diagnosed as Inefficient Uterine Action when:

- Uterine contractions are less than 3 contractions/10 minutes; and/or
- Each contraction lasts for less than 40 seconds, and
- when associated with failure of normal progress

If there is no contraindication, augmentation of labour is indicated.

4 Augmentation of Labour:

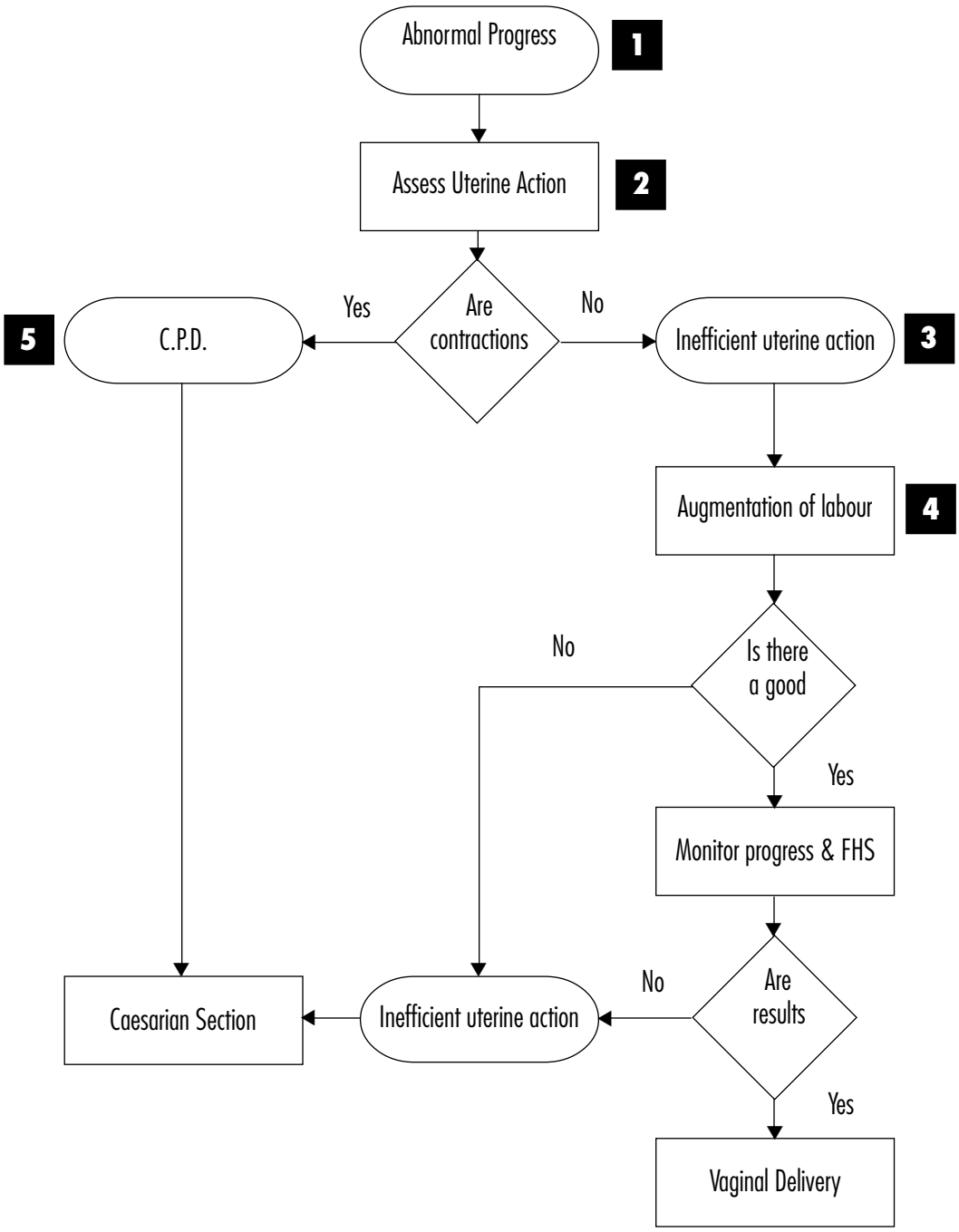
Indications:

This procedure is performed in case of "Failure to Progress" due to inefficient uterine action.

Contraindications:

- Previous uterine scar
- Malpresentation
- Grand multiparity
- Fetal distress
- Cephalopelvic Disproportion (CPD)

V. Failure to Progress in Labour



Procedure for Augmentation of Labour:

- Add 5 IU of Oxytocin into 500 ml. of 5 % Dextrose in Water.
- IV infusion drip of that mixture with rate of 10 drops/minute.
- Gradual increase of number of drops by 10 drops every 20 minutes and observation of uterine contractions until reaching to 3 contractions/10 minutes then stabilize the dose.
- Whenever the optimum contractions are not reached and the bottle is finished, then a 5 IU increase of Oxytocin concentration is used in the new bottle.
- Close observation for normal progress and fetal heart sounds to second stage, if no progress, take to O.R. for operative delivery.

5 Cephalopelvic Disproportion (CPD):

(See Guideline IX, Large Fetus)

Signs: This diagnosis is suspected if:

- The lady is extremely short (less than 150 cm)
- The fetus is estimated to be extremely large (more than 4.5 kg)
- The diagonal conjugate is less than 11.5 cm.
- Jutting sacral promontory or ischial spines, interspinous diameter less than 9 cm
- Narrow subpubic angle (less than 90 degrees)
- Intertuberous diameter is less than 8.5 cm.
- A bony or soft tissue mass is encroaching on the pelvic cavity

In absence of these criteria, if:

- labour fails to progress in spite of good uterine contractions, diagnosis of CPD is made.

May 15 HospitalObstetrics and Gynecology Clinical Indicators

A. Maternal Indicators:

1. Maternal Mortality
2. Unplanned removal, injury, or repair of organ during operative procedure
3. Maternal length of stay more than 5 days after vaginal delivery or more than 7 days after cesarean delivery
4. Delivery unattended by the notified senior physician. List of conditions requiring the senior physician to be called is attached.
5. Postpartum return to delivery room or operating room for management.
6. Primary cesarean delivery for fetal distress which is not recorded on admission.
7. Primary cesarean delivery for failure to progress

B. Neonatal Indicators:

1. Intrapartum death, in hospital, of a fetus or infant weighing 2500 gms or more
2. Term infant admitted to an NICU*.
3. APGAR score of 6 or less at 5 minutes.
4. Birth trauma, such as shoulder dystocia, cephalhematoma, Erb palsy, and clavicular fracture but not caput.
5. Inborn term infant with clinically apparent seizures recorded prior to discharge.

* NICU: Neonatal Intensive Care Unit

C. Gynecologic Indicators:

1. Admission after a return visit to the emergency room for the same problem
2. Occurrence of an infection not present on admission
3. Unplanned admission to special (intensive) care unit.
4 Unplanned return to operating room for surgery during the same admission
5. Gynecologic surgery, except radical hysterectomy or exenteration, using 2 or more units of blood or postoperative hematocrit of less than 24 vol% or hemoglobin of less than 8 gms.
6. Discrepancy between preoperative diagnosis and intraoperative report.
7. Removal of uterus weighing less than 280 gms for leiomyomata
8. Hysterectomy performed on woman younger than 30 except for malignancy

Pediatric Guidelines

II. Indicators for Quality of Care

Each guideline is followed by a table listing key steps in the guideline. These key steps represent major decisions necessary for the correct management of the condition. For some guidelines all key steps are relevant. However, for other guidelines, some key steps do not apply in all situations (e.g., admit to intensive care). In cases where key steps may not apply, a column marked N/A (not applicable) has been added to the YES/NO scoring columns. Mathematical formulae to give a percentage of compliance with the guideline are included, these are called the 'final rating". There are two formulae: one is used when all steps apply, the other is used when some steps are not applicable.

These tables can be used in three ways:

1 . ***To measure an individual physician's compliance with a guideline***
(eg., When treating a case of asthma, Dr. X complied with 75 % of the critical steps).

To produce this statistic, use the final rating as calculated in examples one or two.

2. ***To measure the overall compliance of a group of physicians with a guideline*** (e.g., When treating asthma, physicians complied with, on average, 65% of the key steps).

To produce this statistic, calculate the mean of the final rating.

Example:

Physician 1	Final rating	60%
Physician 2	Final rating	50%
Physician 3	Final rating	70%
	Sum	**180**
Divided by number of physicians		÷3
Overall compliance with the guideline		**60%**

3. ***To measure the compliance of a group of physicians with a single key step in a guideline*** (e.g., When treating asthma, 50% of physicians took and recorded an adequate medical history).

   To produce this statistic, calculate the mean number of "YES" responses for that key step.

Example 1. Asthma - All Key Steps Apply

Mark correct box

Key Steps	Yes	No
1. Was an appropriate history taken and recorded?	x	
2. Was temperature recorded?		X
3. Was respiratory rate recorded?	X	
4. Was the use of accessory muscles recorded?		X
5. Was the presence of cyanosis recorded?	X	
6. Was the grade of asthma recorded?		X
7. Was nebulized salbutamol given in the appropriate doses?	X	
8. Was other treatment given and recorded in accordance with the guidelines?		X
9. At discharge, were medications given in accordance with the guidelines?	X	
10. At discharge, was a follow-up appointment given in accordance with the guidelines?		X

Scoring System:

Numerator = Total Number of "Yes" Marks = .5
Denominator = Total Number of Questions = 10

Final Rating:

$$\text{Numerator} = \frac{5}{10} = 50\%$$
Denominator

Example 2. Inhaled Foreign Body - Some Key Steps May Not Apply

Mark correct box — N/A = Not Applicable

Key Steps	Yes	No	N/A
1. Does the history record information about the speed of onset?	X		
2. Does the history record if the child was playing with objects small enough to be inhaled?		X	
3. Does the history record the presence of stridor?	X		
4. Does the history record if there have been similar episodes previously?	X		
5. Is the respiratory rate recorded?		X	
6. Is the presence of cyanosis recorded?	X		
7. Is it recorded if the condition was considered to be life-threatening?	X		
8. Was the decision whether to transfer to the Chest Hospital made in accordance with the guidelines?		X	
9. If life-threatening and treated at May 15th Hospital, was oxygen given?			X
10. If life-threatening and treated at May 15th Hospital, were back blows or abdominal thrusts used in accordance with the guidelines?			X
11. If life-threatening and treated at May 15th Hospital, was laryngoscopy performed?			X

Scoring System:

Numerator = Total Number of "Yes" Marks = 5

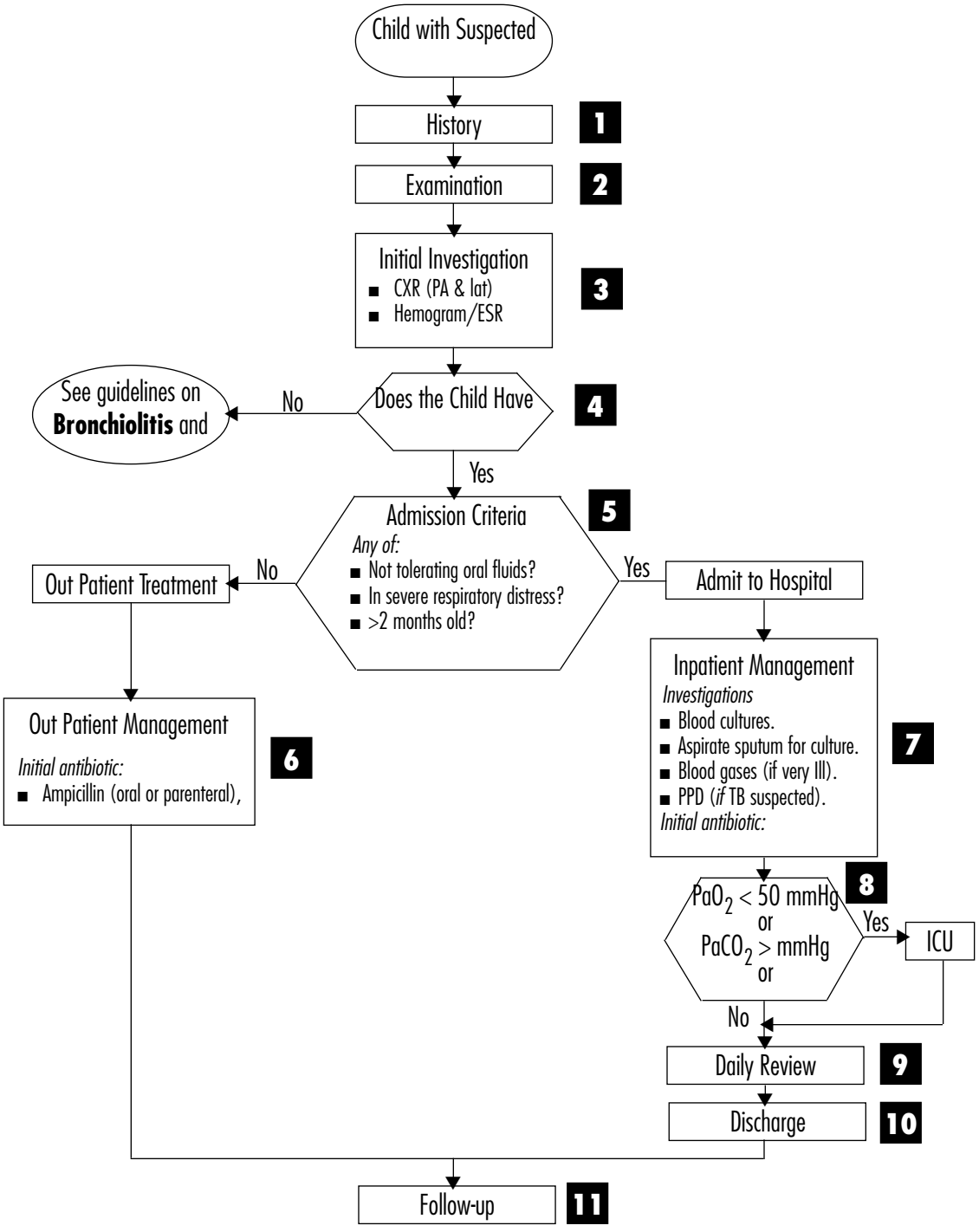
Denominator = 11 Minus Number of "N/A" Marks = 11-3 = 8

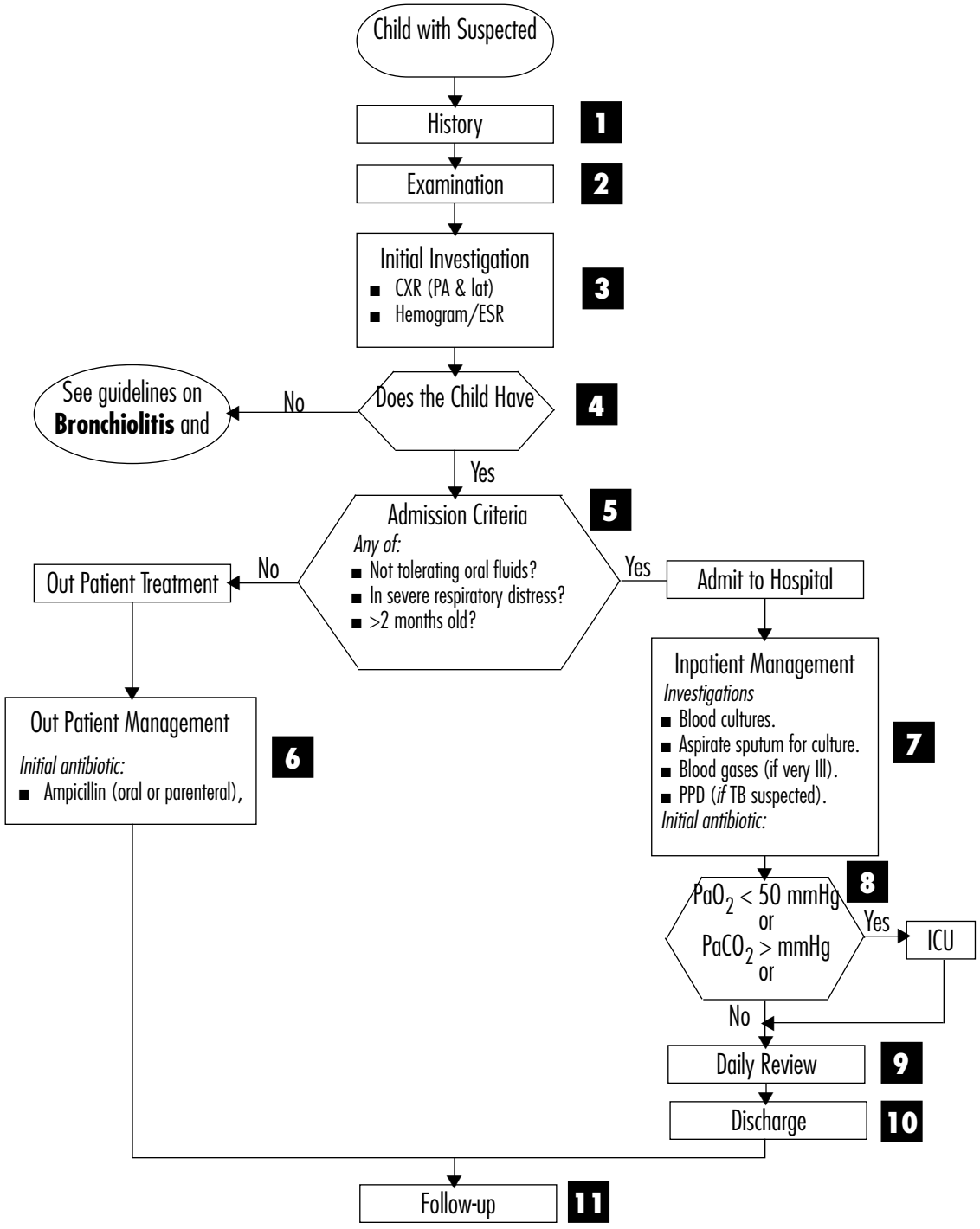
Final Rating:

Numerator = $\frac{5}{8}$ = 62.5%

Denominator

6. Pneumonia


Child with Suspected
History
1
Examination
2
Initial Investigation
■ CXR (PA & lat)
■ Hemogram/ESR
3
Does the Child Have
4
No
See guidelines on **Bronchiolitis** and
Yes
Admission Criteria
5
Any of:
■ Not tolerating oral fluids?
■ In severe respiratory distress?
■ >2 months old?
No
Out Patient Treatment
Yes
Admit to Hospital
Out Patient Management
Initial antibiotic:
■ Ampicillin (oral or parenteral),
6
Inpatient Management
Investigations
■ Blood cultures.
■ Aspirate sputum for culture.
■ Blood gases (if very Ill).
■ PPD (*if* TB suspected).
Initial antibiotic:
7
PaO_2 < 50 mmHg
or
$PaCO_2$ > mmHg
or
8
Yes
ICU
No
Daily Review
9
Discharge
10
Follow-up
11


Child with Suspected
History
1
Examination
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■ CXR (PA & lat)
■ Hemogram/ESR
3
Does the Child Have
4
No
See guidelines on **Bronchiolitis** and
Yes
Admission Criteria
5
Any of:
■ Not tolerating oral fluids?
■ In severe respiratory distress?
■ >2 months old?
No
Out Patient Treatment
Yes
Admit to Hospital
Out Patient Management
Initial antibiotic:
■ Ampicillin (oral or parenteral),
6
Inpatient Management
Investigations
■ Blood cultures.
■ Aspirate sputum for culture.
■ Blood gases (if very Ill).
■ PPD (*if* TB suspected).
Initial antibiotic:
7
PaO_2 < 50 mmHg
or
$PaCO_2$ > mmHg
or
8
Yes
ICU
No
Daily Review
9
Discharge
10
Follow-up
11

Pneumonia is a serious infection of the lower respiratory tract. A patient with pneumonia usually presents with fever, cough, and raised respiratory rate. The X-ray is usually abnormal.

Bacterial causes of pneumonia include *Pneumococcus, Klebsiella, Mycobacterium tuberculosis, E. coli, Enterobacter, Haemophilus influenzae, Group A streptococcus and Staphylococcus aureus*.

Other organisms causing pneumonia include *Mycoplasma pneumonia, Chlamydia trachomatis,* fungal infections and viral infections such as RSV and parainfluenza.

1 History

Ask about:

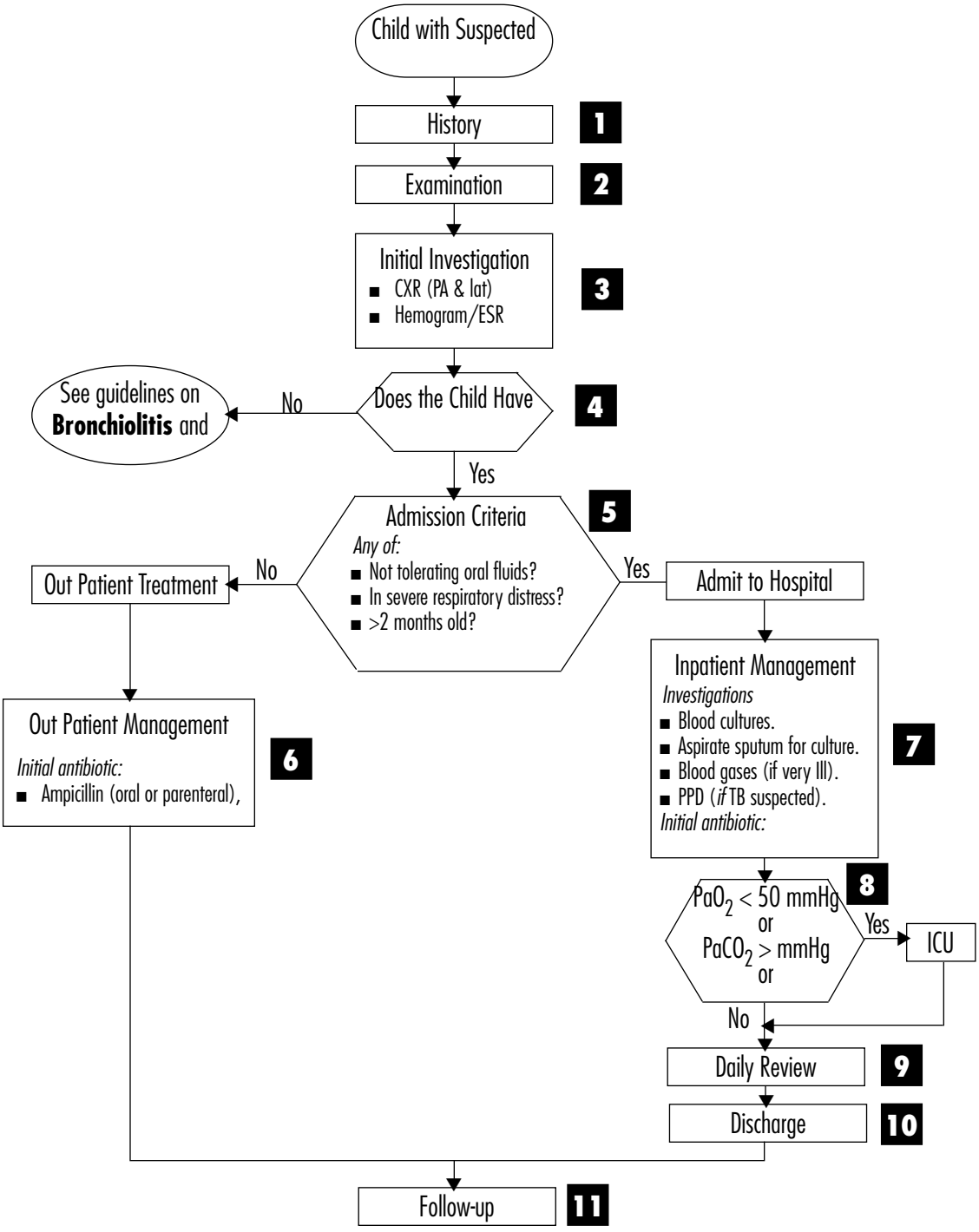
- Difficulty breathing? Rapid or grunting respirations?
- Cough? Is it productive?
- Significant past history (especially chest infections)?
- Preceding upper respiratory infection?
- Restlessness?
- Associated ear infection?
- Length of this illness?
- Vomiting? Tolerating fluids?
- Abdominal pain or diarrhea?
- Sleeping? Not at all? Too much?
- Cyanosis?

2 Examination

Look for:

- General condition: eg active or lethargic; toxic?
- Grunting respirations?
- Raised respiratory rate (best indicator of the degree of respiratory distress).
- Sub-costal retraction / grunting / working alae nasae (nostrils)
- Cyanosis: central or peripheral (indicates respiratory failure - give oxygen and measure blood gases - may require ventilation).

6. Pneumonia


Child with Suspected
History
1
Examination
2
Initial Investigation
■ CXR (PA & lat)
■ Hemogram/ESR
3
Does the Child Have
4
No
See guidelines on **Bronchiolitis** and
Yes
Admission Criteria
5
Any of:
■ Not tolerating oral fluids?
■ In severe respiratory distress?
■ >2 months old?
No
Out Patient Treatment
Yes
Admit to Hospital
Out Patient Management
Initial antibiotic:
■ Ampicillin (oral or parenteral),
6
Inpatient Management
Investigations
■ Blood cultures.
■ Aspirate sputum for culture.
■ Blood gases (if very Ill).
■ PPD (*if* TB suspected).
Initial antibiotic:
7
8
PaO_2 < 50 mmHg
or
$PaCO_2$ > mmHg
or
Yes
ICU
No
Daily Review
9
Discharge
10
Follow-up
11

Examine:

- Temperature, pulse rate, respiratory rate (pneumonia caused by Strep. pneumoniae or H. influenzae is usually associated with high fever; mycoplasma and viral pneumonias cause variable fever - often low grade).
- Ears for bullae.
- Asymmetry of chest expansion (caused by reduced air entry to one area of the lungs).
- Dullness to percussion (usually due to pneumonia or pleural effusion).
- Bronchial breathing, pleural rub, rhales and/or wheezes.
- Heart and abdomen for signs of cardiac failure (eg gallop rhythm or hepatomegaly).
- CNS for signs of meningitis.

3 Initial Investigations

- Chest X-ray (PA and lateral view).
- Hemogram / ESR
  - □ Polymorphonuclear leukocytosis tends to indicate a bacterial pneumonia (strep or hemophilus). Lyinphocytosis indicates viral pneumonia. The WCC in mycoplasma pneumonia may be normal or slightly elevated.
  - □ Ensure the child is not anemic. If Hb < 4 gm/di, consider transfusion.
  - □ Bacterial pneumonias are usually associated with a raised WCC (> 15,000) and raised ESR (>25 mm/hour).
- C-reactive proteins.

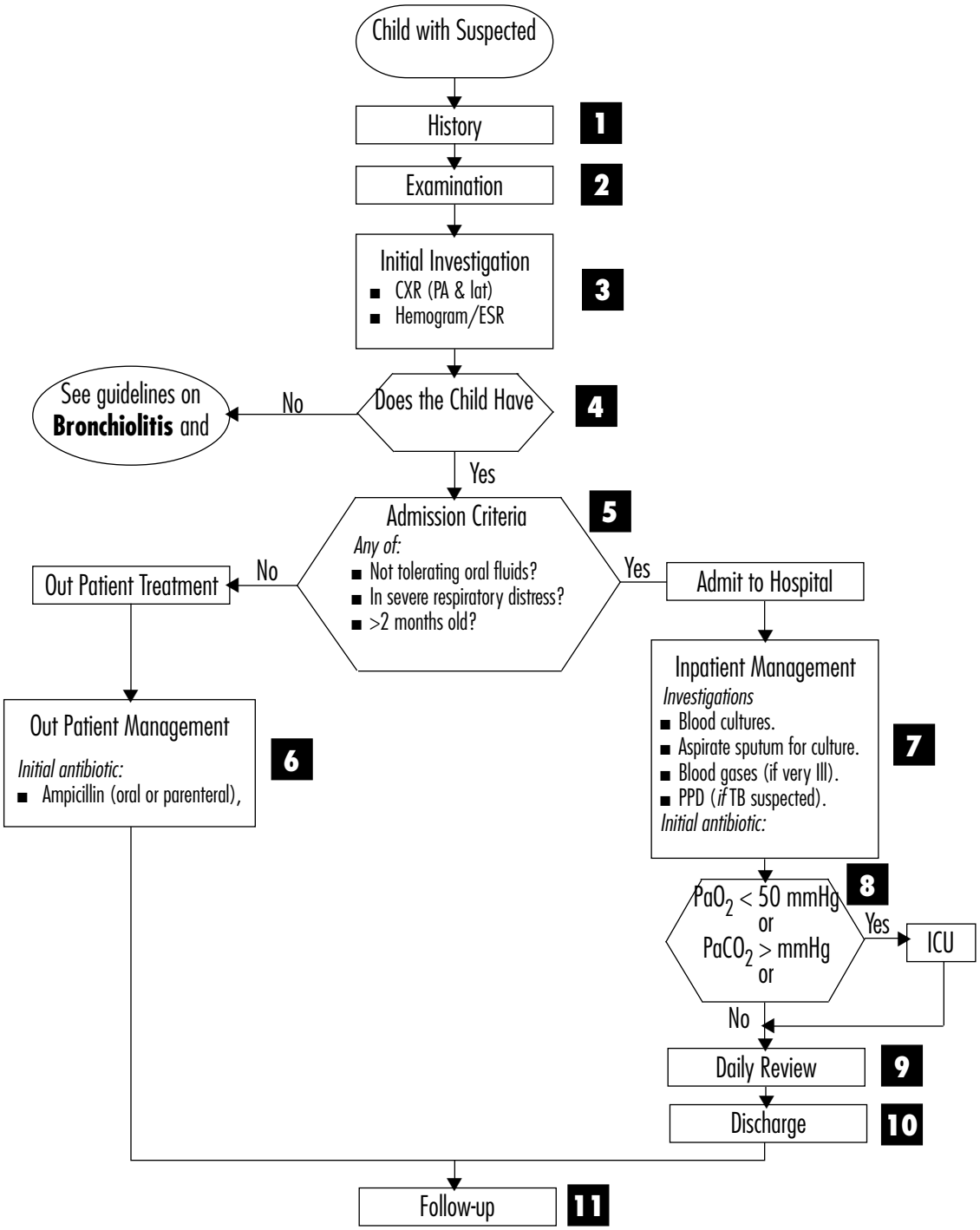
4 Is the Diagnosis Pneumonia?

Both asthma and bronchiolitis can present as a child in respiratory distress, possibly with a mild fever. X-ray will be normal.

- Bronchiolitis is more common in children less than two years of age. It often presents as the first episode of respiratory distress.
- Asthma is more common in children older than two and frequently there have been similar previous episodes.

If the X-ray does not confirm the presence of pneumonia, alternative diagnoses may be bronchiolitis or asthma. Consult those guidelines.

6. Pneumonia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Follow-up
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5 Criteria for Admission

Assess the general condition of the child and the degree of respiratory distress. Admit to hospital if any of the following are present:

- Vomiting, not tolerating oral fluids, or dehydrated.
- Severe lethargy.
- Very high respiratory rate, cyanosis or severe respiratory distress.
- Less than 2 months of age.

If these criteria are not present, the child can be treated as an outpatient.

6 Out Patient Management

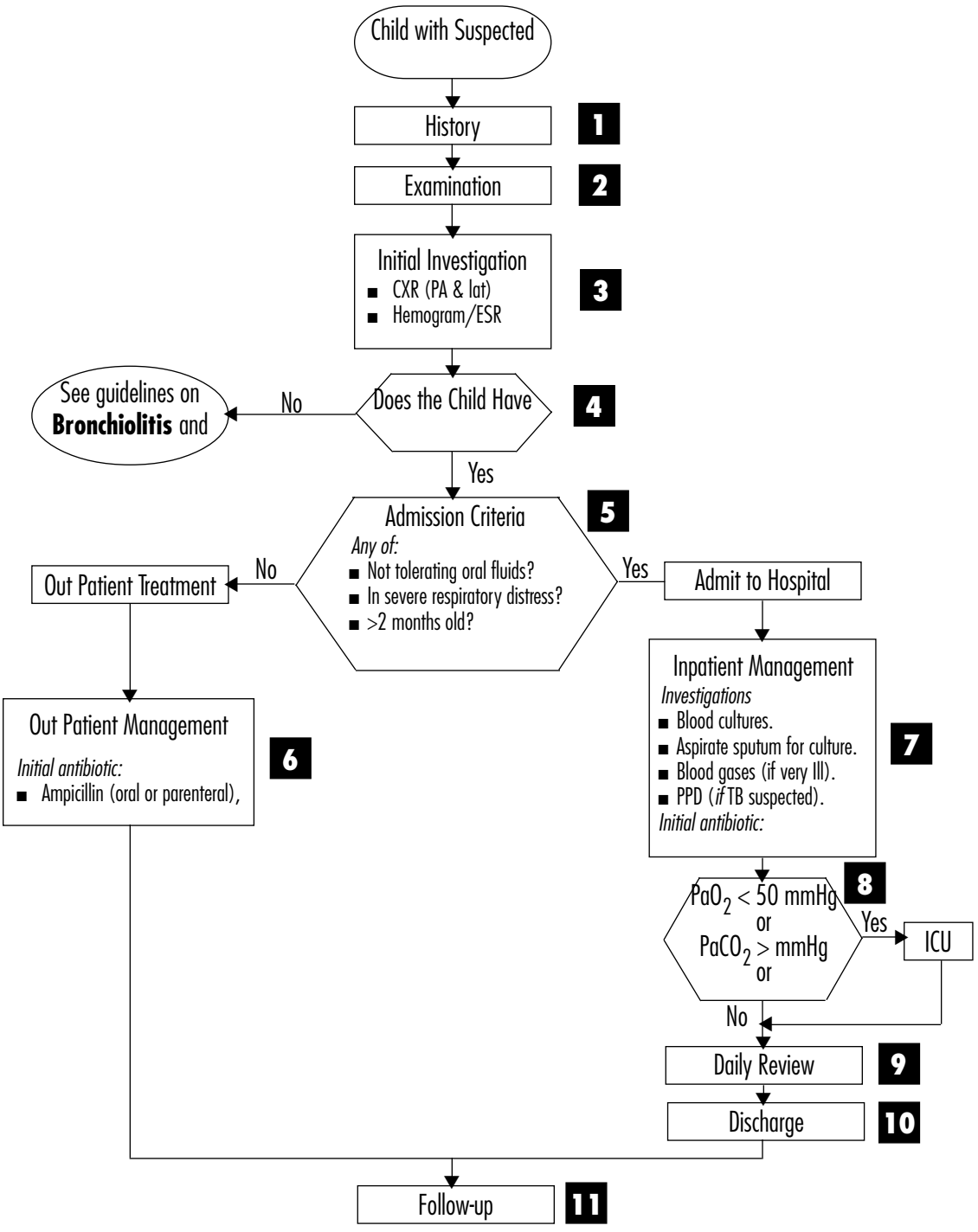
- Encourage fluid intake.
- Give antipyretics if temperature > 38.5° (use paracetamol 60 mg/kg/day divided into 4-6 equal doses given every 4-6 hours as needed).
- If wheezing present, give oral salbutmnol 0.25 ml (0. 1 mg)/kg/dose every 6 hours for 5 days).
- Give antibiotics - the usual antibiotics are AMOXICILLIN or ERYTHROMYCIN - see table in section 10.

7 In Patient Management

General measures

- Encourage fluid intake.
- Give I.V. fluids if not tolerating oral fluids, dehydrated, or requires IV antibiotics.
- Give antipyretics if temperature > 38.50 (use paracetamol 60 mg/kg/day divided into 4-6 equal doses given every 4-6 hours as needed).
- If wheezing present, give nebulized salbutamol (0.03 ml/kg/dose diluted to 2 ml with normal saline every 4 hours as needed).
- Give oxygen if cyanosis or respiratory distress.
- Monitor and record BP, temperature, pulse rate, respiratory rate, and colour every 4 hours.

6. Pneumonia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Investigations

The following cultures should be taken on all children admitted with pneumonia (prior to the administration of antibiotics):

- Blood cultures (at least two sets are required).
- Aspirate culture (sputum, tracheal, pleural, gastric).

Other tests which may be used include:

- Arterial blood gases (measure if child extremely ill or cyanosed).
- PPD if TB is suspected (especially if the illness is prolonged or there has been a case of TB in the family). If TB is confirmed, trace the case.

Antibiotics *(see table)*

- Usual initial antibiotic given is AMPICILLIN.
- Add GENTAMICIN if child < 2 months of age.
- Antibiotic may be changed according to the culture results if patient doesn't improve.
- In general, inpatients are given IV antibiotics, however oral antibiotics may be used if the patient can tolerate oral fluids, is not vomiting and is not too ill.
- Intravenous antibiotics are always used if child is less than 2 months, very ill, not tolerating fluids, vomiting or has severe respiratory distress. Change to oral once the child has been afebrile for 24 hours.

8 Admit to ICU

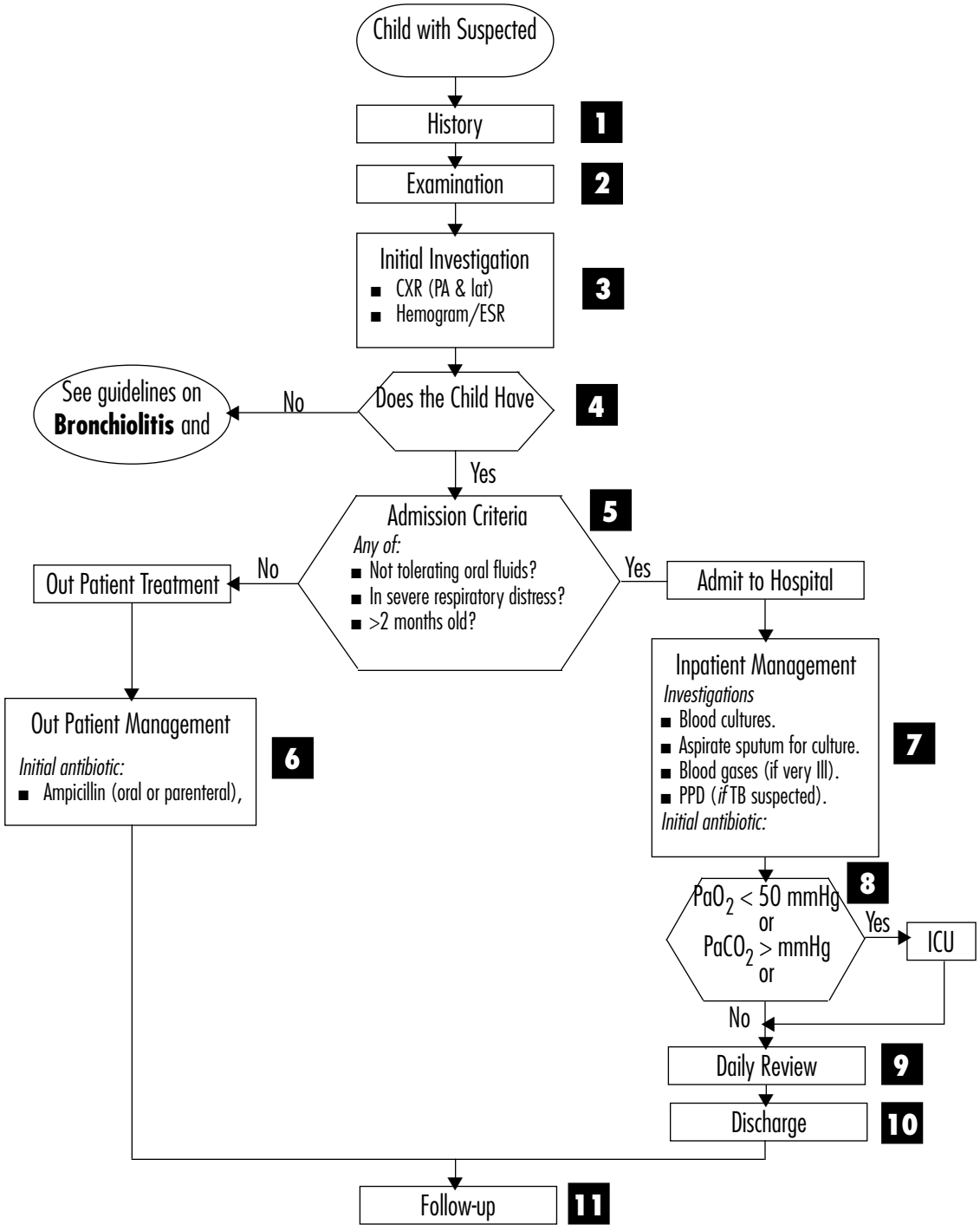
If the respiratory distress is severe or the child has central or peripheral cyanosis, blood gases should be measured.

- If Pa 02 < 50 mmhg, Pa C02 > 50 mmhg, or pH < 7.2 move child to ICU for possible assisted ventilation.

9 Review

- Check patient daily.
- Observe temperature, respiratory rate, heart rate, colour, level of consciousness.

6. Pneumonia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- Auscultate the chest to assess progress and rule out complications (eg. effusion).
- If condition the same or worse, change antibiotics according to culture results. Consider viral pneumonia or mycoplasma.

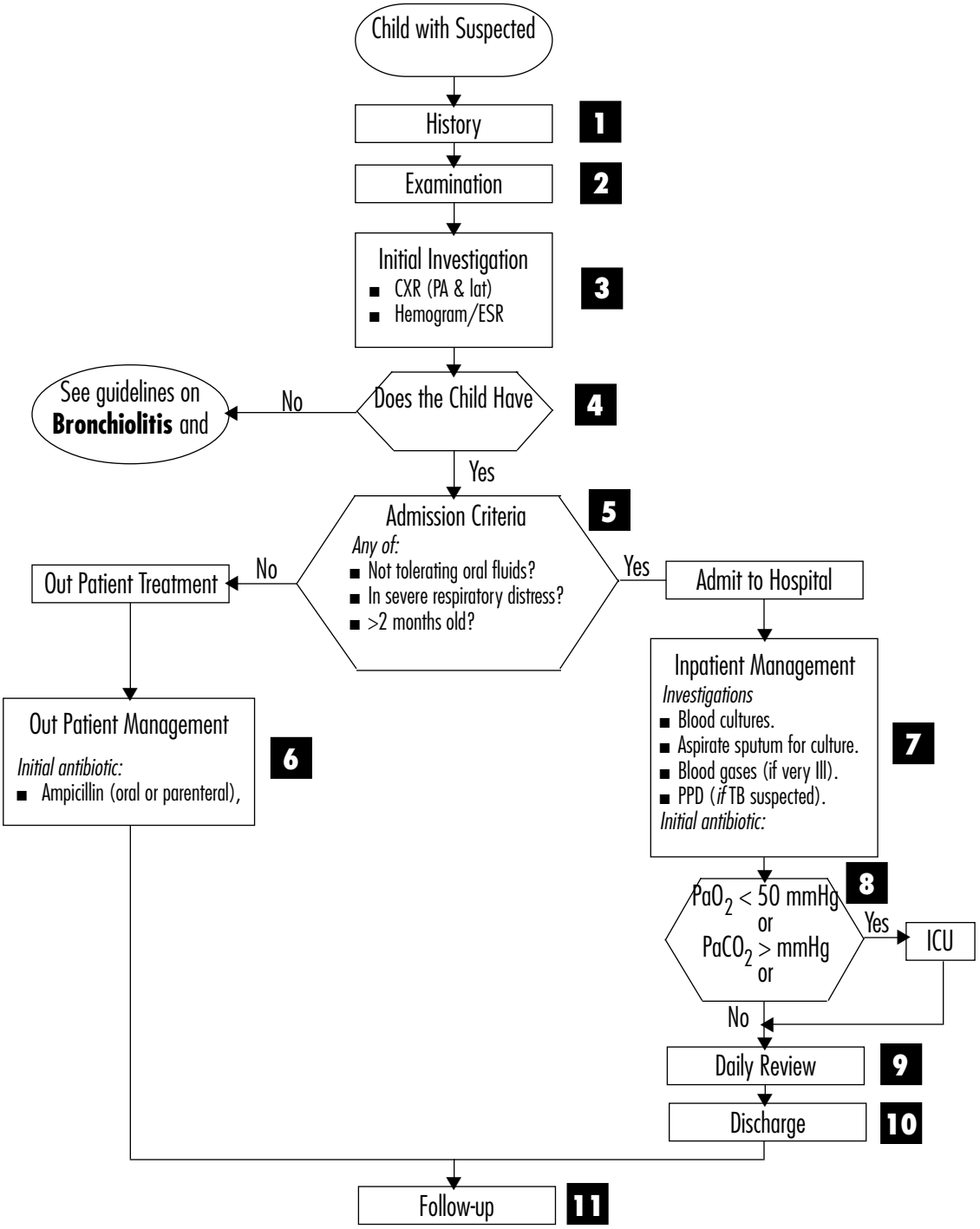
Antibiotic Therapy for Pneumonia

Age-group	Major etiologies	Antibiotic therapy	
		PO	IV
< 2 months*	E. Coli Group B streptococci S. aureus	Rarely given.	(a) Ampicillin 200 mg/kg/day (÷4) given every 6 hours and gentamicin 6-7.5 mg/kg/day (÷3) given every 8 hours, or (b) A cephalosporin** and gentamicin 6-7.5 mg/kg/day (÷ 3) given every 8 hours.
2 mo - 8 yr	Virus S. pneumoniae H. influenzae S. aureus (rare)	(a) Amoxicillin 20-40 mg/kg/day (÷ 3) given every 8 hours, or (b) A cephalosporin**	(a) Ampicillin 200 mg/kg/day (÷ 4) given every 6 hours or (b) A cephalosporin**
≥ 9 yr	Virus S. pneumoniae Mycoplasma S. aureus (rare) Group A streptococci (rare) H. influenzae (rare)	Erythromycin 30-50 mg/kg/day (÷ 3) given every 8 hours.	Ampicillin 200 mg/kg/day (÷ 4) given every 6 hours or (b) A cephalosporin**

* If C. trachomatis is suspected, add oral erythromycin 30-50 mg/kg/day (÷ 3) given every 6 hours.

** For dose, see pediatric drug guide in this manual.

6. Pneumonia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ICU
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Daily Review
9
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10
Follow-up
11

10 Discharge

- Patient can be discharged after he/she has been afebrile for 48 hours.
- Continue same antibiotic for another week.

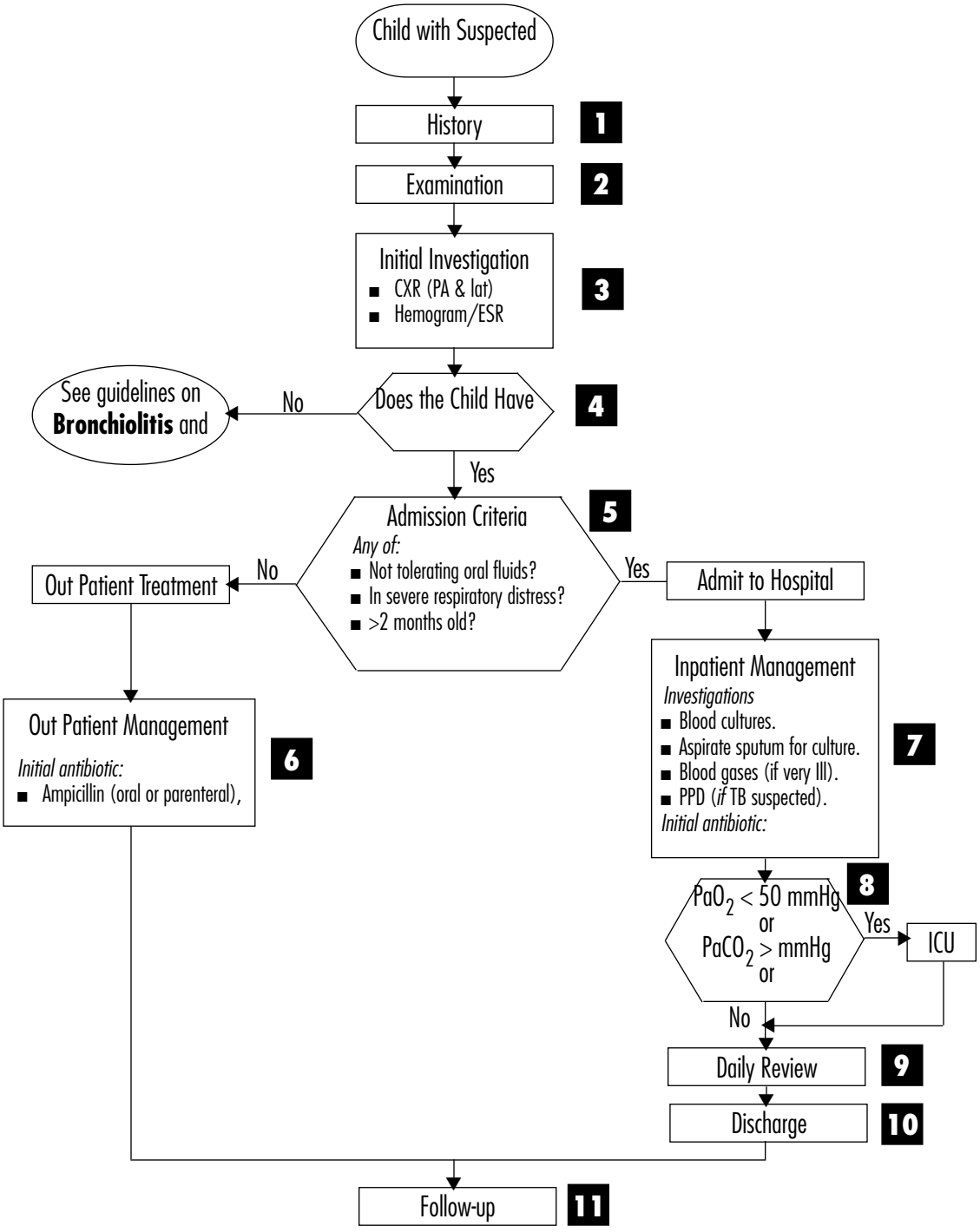
11 Follow Up

(Outpatient management or after discharge of admitted patient).

Check patient in 3 days.

- Assess the patient, auscultate the chest, and rule out complications (eg. effusion).
- If patient has improved, continue same antibiotics for a week.
- If condition the same, change antibiotics according to culture results. Consider viral pneumonia or mycoplasma.
- Admit if condition has deteriorated or if complications have developed.

6. Pneumonia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Indicators for Quality of Care - Pneumonia

Mark correct box N/A = Not Applicable

Indicator	Yes	No	N/A
1. Was a history of "grunting" or rapid respirations recorded?			
2. Was a history of fever recorded?			
3. Was temperature recorded?			
4. Was respiratory rate recorded?			
5. Was the use of accessory muscle recorded?			
6. Was the presence of cyanosis recorded?			
7. Were the results of auscultation of the chest recorded?			
8. Were all three of the initial investigations performed and the results recorded?			
9. Was the decision whether to admit to hospital made in accordance with the guidelines			
10. If admitted, were both blood cultures and an aspirate culture performed before giving antibiotics?			
11. Were antibiotics given in accordance with the guidelines?			
12. Were bronchodilators given in accordance with the guidelines?			
13. If admitted, was the patient reviewed daily and the results recorded?			
14. Was a follow-up appointment given according to the guidelines?			

Scoring System:

Numerator = Total Number of "Yes" Marks = ___

Denominator = 14 Minus Number of "N/A" Marks = ___

Final Rating:

Numerator ___ = _____ %

Denominator

Appendix IV: Obstetric Medical Records

وزارة الصحة
مشروع تطوير المستشفيات
مستشفى

صحيفة ولادة
Obstetric Sheet

اسم المريض :
الرقم الموحد :
القسم
تاريخ الدخول :
العنوان :
الطبيب المعالج

| | | | | | |

رقم السرير السن :
ساعة الدخول

History

Menstrual

LMP:
- Regular or not
- Sure or not
  (Used Hormonal Contraceptive 3 months before that date or not)
- Hormonal Contraceptive or not

EDD: Today Weeks

Family:

_____ Diabetes
_____ Hypertension
_____ Past medical & surgical history
_____ Twins
_____ Malformations
_____ Others

Obstetric History_____ Gravida_____ Para_____

Date	Mature Weeks	Preg	Labor	Puerperium	Outcome			Remarks
					living SB/ND	sex	weight	

وزارة الصحة
مشروع تطوير المستشفيات
مستشفى

ملخص ولادة
Labor Summary

اسم المريض :
السن :
الرقم الموحد :
تاريخ الدخول :
ساعة الدخول د س
تاريخ الخروج
ساعة الخروج د س
العنوان :
عنوان اقرب الأقارب

Labor Summary:

Delivery Time: _____
Doctor: _____
Assistant: _____
Anaesthetist: _____
Mode of Delivery: _____

Placenta & Membranes Weight: _____
Method Expelled: _____
Complete or not: _____
Abnormalities: _____
Remarks: _____
_____

Babies Weight: _____
Gestational Age: _____
Sex: _____
Birth traume: _____

Episiotomy & Lacerations _____
- Type of epi: _____
- Sutures material: _____
- No. of ampules: _____
- Type of Lacerations: _____
- Estimated blood loss: _____
- Blood transfusion Yes ___ No ____
  amount _____

Transmission to
- ward: _____
- Time: _____
- Pulse: _____
- Temp.: _____
- B.P.: _____
- Urine output: _____

In case of surgery:
- Time of operation: _____
- Type of operation: _____
- Anesthesia: _____
- Operator: _____
- Remarks: _____
- Signature: _____

Apgar Score	
Color	
Tone	
Respiration	
H.R.	
Reflexes	
Total	

Baby Discharged ☐

Transferred ☐

Name: _____
Signature

*Resuscitation used
Examined by _____
(Neonatiligist)

وزارة الصحة

مشروع تطوير المستشفيات

مستشفى

Partogram

اسم المريض :

الرقم المرحد :

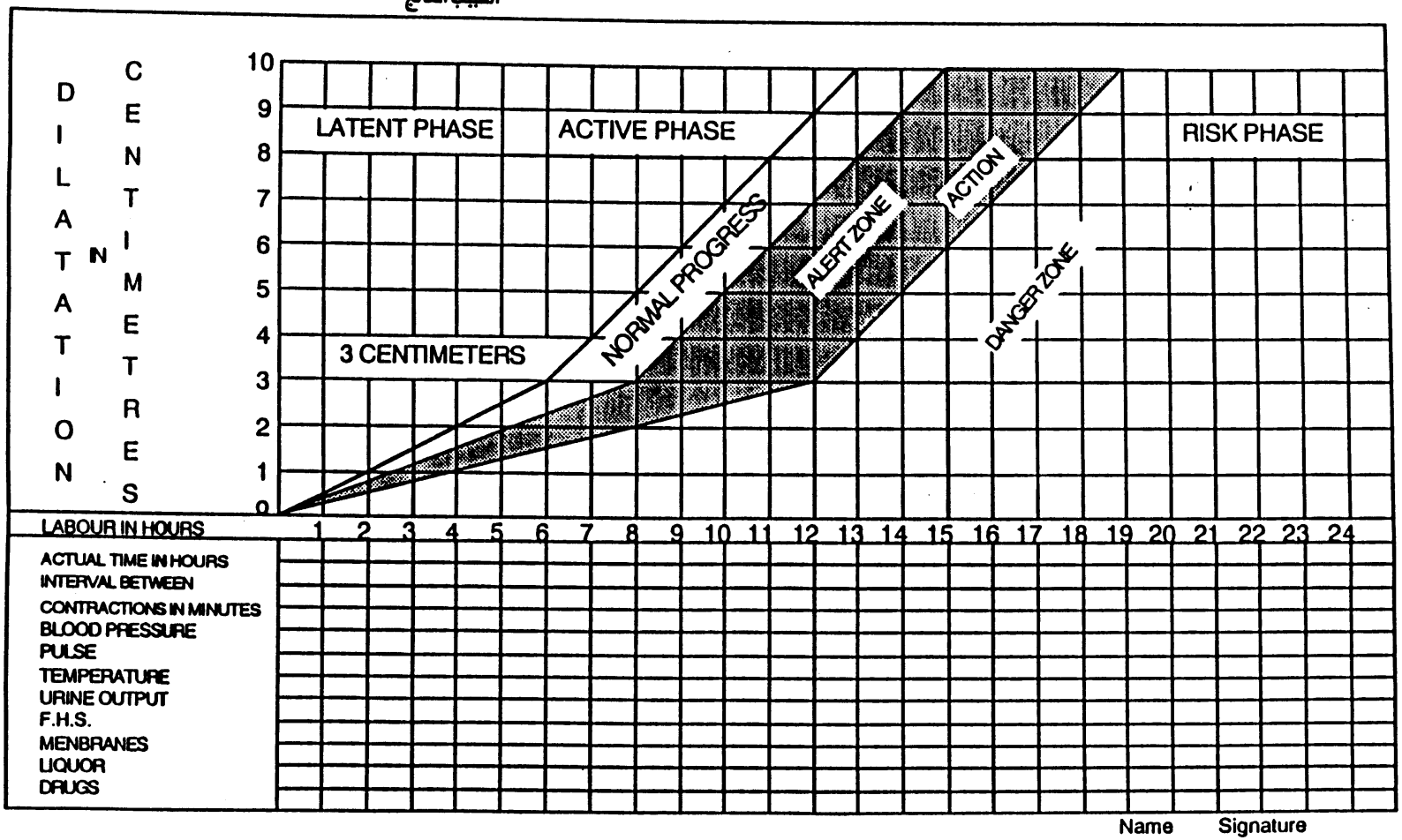
القسم

تاريخ الدخول :

العنوان :

الطبيب المعالج

رقم السرير السن :



Name Signature

Appendix V: Process Improvement Storyboards

Storyboard: Quality Improvement Activity Operating Room Supplies

Country:
Egypt

System Level:
Facility

Description of Problem:
Lately, there has been an increase in the number of times that various medical supplies were lacking in the Emergency Operating Room of May 15 Hospital. There is an opportunity for improvement by decreasing the occurrence of lack of supplies. The results of such improvement will lead to the performance of more operations, a decrease in the number of referrals, and an improvement in the morale of OR staff.

Description of Intervention:
A team was formed to analyze the problem. Through Problem Solving Technique, flowcharting of the process was done. For one month, data collection was performed to detect the possible cause(s). Data collected was about: (1) reviewing the supplies cabinet, (2) number of times when supplies were lacking, (3) administrative steps needed to complete requests for supplies, and (4) number of times the hospital had to buy supplies for the patient from an outside pharmacy due to unavailability of supplies at the hospital pharmacy or at hospital store. As a result of the study, a standardized form containing a standard amount of all items needed is used daily to review the supplies cabinet daily. Other two standardized forms are used to request supplies in case of shortage.

Documented Changes in Service Quality:
Since May 1, 1994: (1) the hospital did not buy any OR supplies due to a shortage discovered just before or during operations, (2) no surgeries were postponed or referred to another hospital due to lack of OR supplies.

Method of Documentation:
Use of the specially designed forms for daily reviewing of the supplies cabinet, forms used for requesting any lacking item(s), and records of OR.

Any Evidence of Institutionalization:
OR. supply process has been incorporated into the hospital procedure manual. Continuous inventory monitoring reports have been maintained over time.

Comments/Further Information:
After testing of the new process for three months, authorization of the new system will be needed. At that time, it would be applicable and replicable in other departments. Together with the needed formal approval, providing enough budget and training will institutionalize the new solution as a system.

Storyboard: Quality Improvement Activity Clinical Guidelines

Country:
Egypt

System Level:
Facility

Description of Problem:
There is documented evidence that there is wide variation in clinical practice among physicians and that sub-optimal care is being provided to patients.

Description of Intervention:
Three teams from OB/Gyn, Pediatric, and Orthopedic Departments were formed. Each team was matched with two expert consultants. Weekly meetings were conducted to discuss new guidelines for clinical practice.

Documented Changes in Service Quality:
- More cases are reviewed and questioned for the appropriateness of care provided
- Second opinion is being requested now for selected surgical procedures

Method of Documentation:
- Two sets of clinical guidelines (OB/Gyn & Ped.) were developed
- Selected indicators for each set of guidelines are in the process of being included in the medical record

Any Evidence of Institutionalization:
- Training in specialized clinical skills have been provided to assist physicians in better implementing clinical guidelines
- Resource needs (supplies/equipment) are being requested from CRHP and will be provided soon

Storyboard: Quality Improvement Activity Improving Operating Room Nursing Skills

Country:
Egypt

System Level: *(e.g., facility, district, national)*
Facility

Description of Problem:
There is documented evidence that operating room (O.R.) nurses lack the basic nursing skills needed for basic O.R. patient care. This problem was affecting the quality of clinical care provided and was an obstacle to any effort for improvement in the O.R.

Description of Intervention:
- Twelve nurses have been selected for O.R. training.
- Hands-on training curriculum was developed for 5 different types of nursing: supervisors, scrub nurses, circulating, CSSD, and recovery room nurses.
- Contracted with a semiprivate hospital to serve as training sites.
- Hired an O.R. nurse consultant

Documented Change in Service Quality:
- Nurses now are implementing basic O.R. skills such as scrubbing, gowning, draping, patient preparation, etc.
- Nurses are always wearing the appropriate O.R. surgical suit.
- More nursing forms are being filled out for each patient.

Method of Documentation:
- Training materials are all available.
- O.R. plan and time table is prepared, reviewed, and evaluated.
- Use of supervisory checklist to monitor performance during operations.
- The use of certain sterilized instruments, supplies, and antiseptics have increased.

Any Evidence of Institutionalization:

- Special policy was signed by hospital administration to assign the 12 nurses permanently as O.R. nurses at the hospital.
- The policies and procedures manual has been approved and endorsed by the hospital administration and communicated to O.R. staff.

Storyboard: Quality Improvement Activity Reception Desk

Country:
Egypt

System Level:
Facility

Description of Problem:
There was no information desk at May 15 Hospital. Patients and visitors have no place to go to get information or seek help. The first contact for every person visiting the hospital was the window located at the front gate outside the main building. That window serves as the cashier to outpatient clinics and for getting visitor card. There was potential area for improvement between the time patients and visitors reach the hospital until they leave. They will not wait in long waiting lines outside the hospital, which creates dissatisfaction among patients and visitors.

Description of Intervention:
A process improvement team was formed to study and analyze the problem. The team flowcharted the process. The non-functional reception area was assessed. Suggestions for solving this problem were assigning a qualified trained nurse to serve as a receptionist and training of the assigned nurse in Quality Customer Service. Interviewing and selection of two nurses was performed and a pretty navy blue uniform was designed. Job Description was developed. They were coached to creating channels of communication with hospital departments and to develop a complete file that contains blueprint of all information needed for their work. They were exposed to an intensive training in Quality Customer Service at May 15 Hospital and to a tailored Practical Training in Arab Contractors Medical Center. The Information Desk was established and a pilot testing for new client flow in outpatient department was performed.

Documented Changes in Service Quality:
There are no more waiting lines outside the hospital. More revenue (50%) is generated from visitor fees due to tighter controls. Clients and community's

satisfaction is very clear and documented in what published in the Popular Egyptian Weekly Magazine,"Sabah El-Kheer" (Good Morning) on January 6, 1994:"For the first time, in a public hospital, you will be received by smiling girls, wearing an uniform and will help you and lead you in the hospital. It is not a dream! It is a FACT happened at May 15 Hospital by Its Director, Dr. M. Shehata, in the context of the comprehensive improvements of the hospital."

Method of Documentation:
Through observation and interviewing the hospital clients. The increased revenue is documented in the accounting department reports.

Any Evidence of Institutionalization:
Presence of reception desk with receptionists in hospital foyer. Accounting receipts of visitor fees paid.